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Museum Curatorship in the National Park Service 1904-1982

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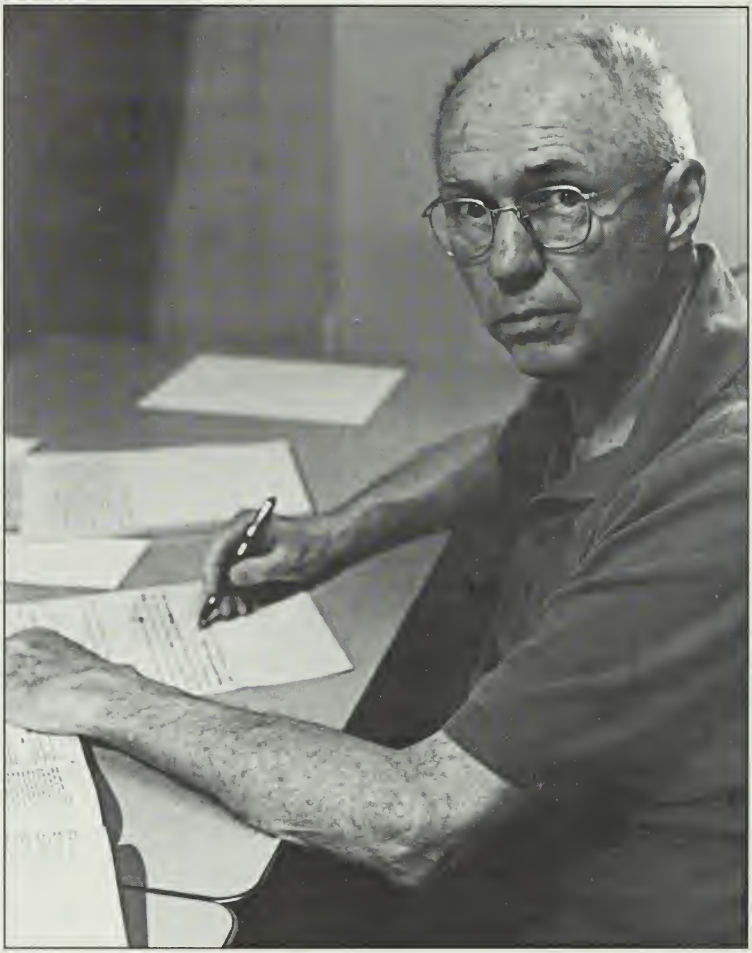

Ralph H. Lewis

MUSEUM CURATORSHIP IN THE NATIONAL PARK SERVICE

1904–1982

Ralph H. Lewis

Department of the Interior
National Park Service
Curatorial Services Division
Washington, D.C.

1993

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CONTENTS

FOREWORD v

PREFACE vii

CHAPTER ONE: MUSEUM BEGINNINGS IN THE NATIONAL PARKS 1
Natural Parks 1
Archeological Parks 11
Historical Parks 18

CHAPTER TWO: PHILANTHROPY AND GUIDANCE, 1924–1934 29
The Yosemite Museum 29
Yavapai and Bear Mountain 38
The Yellowstone Museums 42
Park Museums and the Field Division of Education 49

CHAPTER THREE: THE MUSEUM DIVISION, 1935–1946 67
The Eastern Museum Division 67
The Interior Department Museum 78
Eastern Park Museum Projects to 1942 82
The Museum Division Program in the West to 1942 98
The Wartime Museum Program 106

CHAPTER FOUR: THE MUSEUM BRANCH, 1947–1964 117
Resumption of Museum Development 117
Museum Growth Before Mission 66 128
Museums in Mission 66 146

CHAPTER FIVE: THE MUSEUM PROGRAM, 1964–1982 173
Redirection of Exhibit Functions 174
Branch of Museum Development, 1964–1967 179
Branch of Museum Operations, 1964–1967 183
Division of Museums, 1967–1973 185
Division of Exhibits, 1974–1980 197
Branch/Division of Reference Services, 1974–1980 201
Division of Museum Services, 1974–1981 202

CHAPTER SIX: FURNISHED HISTORIC STRUCTURE MUSEUMS 221
Historic House Museums in the National Parks to 1941 222
Museum Branch Involvement, 1946–1955 231
Evolution of the Furnishing Plan, 1955–1982 235
Operational Aspects, 1958–1982 246

CHAPTER SEVEN: COLLECTIONS 257
Natural Resource Collections 258
Cultural Resource Collections 267

CHAPTER EIGHT: COLLECTION MANAGEMENT 291
Accession Policies and Procedures 291
Museum Records 302
Specimen Protection and Routine Care 311
Curatorial Staffing 322

CHAPTER NINE: CONSERVATION OF CULTURAL AND SCIENTIFIC OBJECTS 335
The Empirical Phase, 1916–1948 337
The Scientific Conservation Phase, 1949–1982 342

SOURCES CONSULTED 367

INDEX 375

FOREWORD

While obtaining degrees in biology and entomology from the University of Rochester, Ralph Lewis studied museum methods and worked in the university's natural history museum. In 1935 he came to work for the National Park Service as an assistant curator. He helped plan several new park museums and the Interior Department's headquarters museum in Washington before serving a year-long Rockefeller internship at the Buffalo Museum of Science in 1937–38. After five years as park historian at Jefferson National Expansion Memorial, he became assistant chief of the Park Service's Museum Branch in 1946 and chief in 1954, overseeing the full range of Park Service museum activities. When development and operational functions were organizationally separated in 1964 he was made chief of the Branch of Museum Operations, the post he held until his retirement in 1971.

Fortunately, Ralph's involvement with park museums did not end at that point. Having edited the Park Service's 1941 *Field Manual for Museums* and written much of the Service's *Museum Handbook*, he was ideally equipped to prepare their sequel, the *Manual for Museums* published by the Service in 1976. As a volunteer, he has produced collection management plans for seven parks and spent thousands of hours arranging, cataloging, and caring for the collection at Harpers Ferry National Historical Park. The origin of the current work, another labor of love, is explained in his preface.

The Park Service got far more than it expected when Ralph turned in the manuscript for this book. A work of true scholarship, it placed the evolution of the Service's museum program in a broad professional context. Because it was also too long to be published for convenient access in a single volume, Bureau Historian Barry Mackintosh agreed to edit it down. With characteristic generosity, Ralph had credited at length virtually everyone ever involved with the museum program; Barry had to delete some of the more peripheral players. At the same time, while Ralph gave due attention to his predecessors and successors at the helm of the program, he alluded to himself so rarely and indirectly that his name appears in the narrative only through the editor's intervention. Many of Ralph's notes and citations, which ran to nearly two hundred pages, had to be deleted or compressed. Readers wishing more detail than remains may consult his manuscript in the National Park Service History Collection at the Harpers Ferry Center Library.

From his long and leading role in the Service's museum program, Ralph necessarily came to this project with personal opinions on many of its personnel, policies, and practices over the years. He clearly believes,

for example, that the exhibition or other use of museum objects should not take precedence over their preservation. Although he is scrupulously fair in his treatment of controversial issues, always giving those of differing viewpoints their due, his own biases are evident. Readers not sharing them may not agree with all he says, but they should nevertheless welcome the unique perspective he brings to his story.

Museum curatorship in the National Park Service has benefited enormously from Ralph Lewis's leadership and ongoing involvement. Those who worked with him, and those of us who have followed him and cherish his continued presence, already well know this. Those who have not been so privileged will surely learn it from this book. Ralph may have been unduly modest about his own contributions, but his concern for park museums comes through loud and clear. If what follows leads more people to share this concern, it will surely have met his intent.

Ann Hitchcock
Chief Curator
National Park Service

PREFACE

Museums have played vital roles in interpreting park resources and themes to the public. Like museums elsewhere, park museums are defined largely by the work of curators. Curators gather and care for collections of objects, record and study them, and use them in exhibits and other interpretive media. In the national parks work of this kind went on for years before any staff member received the title of curator, and many people with other titles—superintendents, rangers, naturalists, historians, archeologists, and clerical and custodial workers—still do such work. Conservators, museum registrars, exhibit designers, preparators, and technicians regularly collaborate with curators as different sorts of museum specialists. They are all part of curatorship to the extent that they help acquire, take care of, or use museum specimens. They have created much of the history in the pages that follow.

Arthur C. Allen conceived and initiated this study while chief of the Division of Museum Services at the National Park Service's Harpers Ferry Center. He hoped that a more complete picture of how curatorial work had developed in the Park Service might clarify long-standing problems his division faced. Ten months, he thought, should suffice for someone familiar with the background of the museum program to search out and compile a trustworthy digest of the facts. A purchase order dated August 3, 1978, outlined the project's proposed scope and provided for incidental expenses the research might entail. This writer promptly began work, but the sources proved much more voluminous and scattered than anticipated. Although the study gathered material Allen found useful, research and writing were far from complete when he transferred from the museum program to the Blue Ridge Parkway in 1983. Chief Curator Ann Hitchcock, who inherited the curatorial problems in acute form upon her appointment in 1980, encouraged continuation of the project.

It became apparent early that a review limited to curatorial matters in a narrow sense would fail to place them adequately in context. The curatorial imperatives had been so closely interwoven into the whole fabric of museum work in the parks that they resisted proper analysis in isolation. Consequently, this study first traces growth of the museum program as a whole. The first five chapters chronicle museum development in the national parks from the earliest park museums to 1982. The sixth chapter examines the distinctive development of furnished historic structure museums in the parks. The last three chapters focus more sharply on the curatorial aspects of park museums: the collections, their management, and their care.

The National Park Service History Collection in the Harpers Ferry Center Library was the principal source of data used in this study. What usefulness the resulting document has owes much to those responsible for the collection: David H. Wallace as the initiator, Richard W. Russell as its first curator, Ruthanne Heriot as special collection librarian, and David Nathanson as chief of HFC's Branch of Library, Archives, and Graphics Research. Nathanson's knowledge of the collection and its organization and his sustained professional helpfulness toward its use were reflected in the effective cooperation received from his staff, especially library technician Nancy Lee Potts and secretaries Beverley Foltz and Susan Myers.

Richard Russell made an additional important contribution by giving the writer access to diaries of his father, Carl P. Russell, and letters between his father and mother concerning day-to-day developments during critical formative periods of the Park Service museum program. These manuscripts valuably supplemented the carefully preserved and organized Carl Parcher Russell Papers in the archives of the Washington State University Library at Pullman. The writer acknowledges effective assistance from the chief of the library's Manuscripts-Archives Division in consulting this collection also.

Chief Curator Ann Hitchcock supported work on the study in numerous ways. She permitted continued use of office facilities, opened Curatorial Services Division files, reviewed drafts, and made many constructive suggestions. Members of her staff, especially Anthony M. Knapp, were also supportive. Art Allen and Thomas Vaughan took active interest in the project as long as they remained at Harpers Ferry and continued to review chapter drafts and provide helpful comments after moving to new responsibilities. In the division's Harpers Ferry unit all the staff curators including Richard Borges, Gordon Gay, Anne Jordan, Diana Pardue, and Suzanne Schell as well as museum specialist Donald Cumberland supplied needed data or offered leads in answer to the writer's frequent questions. In later stages John Hunter helped surmount technical difficulties. Staff curator Kathleen Triggs Byrne helped especially in accessing National Catalog and clearinghouse details. Carolyn Moler, unit secretary, provided essential assistance both informational and technical, and her well-kept files were an important source of data. Clerk-typists Doris Basch and Anna Petry ably supplemented her technical help.

Harpers Ferry Center staff members aided the project on numerous occasions. Personnel officer Shirley H. Caniford and her staff, including Marilyn Longerbeam and Carolyn West, filled in employment dates for several significant museum workers whose records were incomplete in other sources. The personnel staff also supplied information on classification standards for Park Service museum positions. Sarah M. Olson, chief of the Division of Historic Furnishings, and David Wallace helpfully reviewed the

chapter on furnished historic structure museums and opened the Vera Craig files. John Demer as chief, Division of Conservation, provided access to his division's files while conservators Gregory Byrne, Thomas Carter, Toby Raphael, Daniel Riss, Barclay Rogers, and Ronald Sheetz filled information gaps for the final chapter. Dan Riss also helped locate references in the division library and called items of potential relevance to the writer's attention. Exhibits specialist Olin Nave verified some needed data. HFC kindly granted permission to consult the transcript of an interview of Dr. and Mrs. Jean C. Harrington by Charles B. Hosmer, Jr.

Among present and former field staff who took pains to answer queries and supply information, the writer is especially grateful to regional curator Jonathan W. Bayless; collections manager Barbara L. Beroza, Yosemite National Park; supervisory museum curator Allen S. Bohnert, Southeast Archeological Center; museum curator Susan J. Buchel, Nez Perce National Historical Park; park naturalist Richard Burns, Sequoia National Park; Robert C. Heyder, superintendent of Mesa Verde National Park; Louise Hinchliffe, Grand Canyon National Park's librarian; Richard Howard, chief of interpretation and resource management, and John M. Andresen, ranger, at Casa Grande Ruins National Monument; museum specialist Kathleen L. Manscill, Great Smoky Mountains National Park; supervisory park ranger Betty McSwain, Pipestone National Monument; Betty C. Monkman, associate curator at the White House; Franklin G. Smith, superintendent of Chamizal National Memorial; Jack Smith of Mesa Verde National Park; Roy W. Weaver, superintendent of Nez Perce National Historical Park; regional curator Pamela B. West, and Peter S. White, University of North Carolina.

Additional help was received from Virginia L. Cummings and her colleagues at the Buffalo Museum of Science. National Park Service bureau historian Barry Mackintosh provided advice and encouragement as he reviewed and edited chapter drafts. For assistance in obtaining illustrations we thank Thomas A. DuRant, curator of the NPS historic photographic collections; Ray Bowers, Carnegie Institution of Washington; Henry Lie, Center for Conservation and Technical Studies, Harvard University Art Museums; Martha L. Mitchell, Brown University archivist; and Elizabeth L. Robins, registrar, Buffalo Museum of Science. Staff curator Elizabeth M. Browning prepared the comprehensive index.

Dorothy L. Lewis not only reviewed critically the study in all stages of the draft but also endured without complaint the demands on disposable time made by the project through more than a decade.

MUSEUM BEGINNINGS IN THE NATIONAL PARKS

Park museums did not grow from a single root, nor did any central authority decree their initial establishment. The first ones developed independently, created by local initiative to meet perceived needs. They could have received little stimulus through the rudimentary channels of communication that existed among the parks before creation of the National Park Service in 1916.

Early park employees had two primary duties that have remained fundamental: protecting park resources and serving park visitors. Many visitors were eager to learn and asked questions, often ones lacking ready answers. Staff members responded to this lively interest as best they could. Some of them did so in part by collecting, identifying, labeling, and exhibiting pertinent specimens. The people who undertook these curatorial tasks in addition to their regular duties carried on to some extent—perhaps with little intention—the behind-the-scenes museum functions of recording and preserving park resources. It soon became apparent that the more visitors understood about these resources, the more interested they were in protecting them. This observation added momentum to museum development in the parks.

Perhaps none of those who started the first park museums had worked in museums previously. But museums were part of the intellectual climate in which they lived. During the first quarter of the twentieth century museum scientists visited most of the national parks and many of the national monuments to collect specimens and data. Park workers were influenced both by these contacts and by public interest in what museums were doing.

Park museums did not sprout up in a cultural vacuum. They were engendered by a variety of outside factors, which led to three distinct lines of progression. The first to be considered took place in natural resource parks.

Natural Parks

On September 10, 1904, Major John Bigelow, Jr., of the 9th U.S. Cavalry, acting superintendent of Yosemite National Park, issued his General Orders No. 46 establishing an arboretum in the park.[1] An arboretum is a form of museum, making this among the first museums in any national park. Setting aside between 75 and one hundred acres near the Wawona Hotel, Bigelow detailed the detachment surgeon, Lieutenant Henry F. Pipes, to lay out trails, label samples of the various species of trees and flowers with their common and scientific names, transplant to the arboretum specimens of

other interesting plants found in the park, and protect the area from misuse. He also instructed civilian rangers to collect plants from elsewhere in the park and to look after the arboretum during the winter while the troops were gone.

Pipes cleared the paths, equipped them with signposts and benches, and labeled 36 species of plants on one-inch planks painted khaki and nailed to trees or posts. Time permitted moving in only one transplant. When the arboretum elicited an inquiry from the Department of the Interior, Bigelow justified it by stating that an important purpose of the park was "to provide a great museum of nature for the public free of cost." This concept of the park itself as a museum is a significant and recurring one. He went on to express his hope that the arboretum would "some day be supplemented by a building serving the purpose of a museum and library."[2]

Bigelow retired from the Army at the end of the 1904 season. He commended the arboretum to his successor, Captain Harry C. Benson of the 4th Cavalry, but circumstances prevented its continued development. In 1905-06 a boundary change removed the acreage containing the arboretum from the park and California retroceded Yosemite Valley to the federal government, making it the park's centerpiece. The arboretum was almost completely forgotten. After 47 years of total neglect a park ranger retraced the overgrown paths and located eight of the original labels still in place and faintly legible.[3]

Museum development in Yosemite did not wait that long to resume. In 1914 the Museum of Vertebrate Zoology, founded in 1908 at the University of California in Berkeley, began a study of the mammals, birds, reptiles, and amphibians of the Yosemite region. Field work for the study continued until August 1920 with one or more expeditions each year except in wartime. Museum staff spent 957 man-days collecting 2,001 pages of field notes and 4,354 specimens, preserving both in the museum as an invaluable record of park resources. Yosemite's staff not only helped with logistics but added useful observations and specimens.[4]

Joseph Grinnell, director of the Museum of Vertebrate Zoology and leader of the Yosemite study, was a museologist and teacher as well as zoologist.[5] He and his field workers significantly increased local awareness of museum policies, practices, and opportunities. Stephen T. Mather, busy with the creation of a national park service, became so interested that he contributed personally toward the costs of field studies.[6] Grinnell's influence fostered the creation of a museum of sorts in the park in 1915. A number of mounted birds and mammals, and apparently some pressed plants accompanied by watercolor sketches, were exhibited in the crowded headquarters building, which also contained a newly established information bureau. Because Grinnell taught that "people instinctively want to know the names of things," each specimen probably had its label.[7]

Park ranger Forest S. Townsley contributed at least some of the mounted animals. After previous service in Platt National Park, he joined the small ranger staff at Yosemite in 1913, became chief ranger in 1916, and held this position until his death in 1943. Taxidermy was his hobby. He probably taught himself with the aid of one or more of the excellent handbooks by museum taxidermists that had sold widely since the 1890s. No doubt his contacts with Grinnell and other field workers from the Museum of Vertebrate Zoology helped to intensify his interest and refine his technique.

If Townsley had a key part in starting the little museum at headquarters, he received reinforcement with the appointment of Ansel F. Hall as information ranger in 1919.[8] Conditions then favored museum growth. The National Park Service had begun to function under a policy letter Secretary of the Interior Franklin K. Lane sent Director Mather on May 13, 1918. "The educational, as well as the recreational, use of the national parks should be encouraged in every practicable way. . . ," it stated in part. "Museums containing specimens of wild flowers, shrubs, and trees and mounted animals, birds, and fish native to the parks, and other exhibits of this character, will be established as authorized."[9] This basic statement also contained the germ of future accession policies limiting the scope of park museum collections.

Mather himself was seizing upon curatorial measures in his vigorous campaign to build public support for the national parks. As a feature of the Fourth National Park Conference in January 1917 he arranged for a special exhibition at the Smithsonian's National Museum. Forty-five paintings of park scenes by such artists as Bierstadt, Leigh, Moran, Rungius, and Twachtman were hung for the opening reception. Most remained on public display until after President Woodrow Wilson's second inauguration in March. During the same fiscal year Mather launched an experimental traveling exhibition intended for display in libraries. It consisted of 24 framed photographs of park scenery packed in two reusable shipping boxes. Its continuing popularity led the director to request funds to produce and circulate additional sets.[10]

Mather's early annual reports contained enthusiastic references to museum developments in the parks. For Yosemite he proposed to include ample museum space in the new administration building he was asking Congress to finance. His 1919 report announced establishment of a National Parks Educational Committee chaired by the secretary of the Smithsonian Institution. Its objectives included active promotion of the idea that the national parks are "museums of Nature in her supreme manifestations," an echo of Major Bigelow's concept. "One of the most important matters to receive earnest consideration is the early establishment of adequate museums in every one of our parks in which comprehensive exhibits of the

flora and fauna, and perhaps the minerals of the region, can be placed," Mather declared in his 1920 report.[11]

Undergirding such internal factors favorable to park museum development was an external one. The American public was on the verge of a decade of heightened interest in natural history. The nature study movement, which had been growing since the 1890s, was approaching its harvest time. Excitement over the evolution controversy was also building toward a climax. Many of the visitors who stopped at the Yosemite information bureau in 1919 came with curiosity about the plants, animals, and geologic history of the park already aroused.[12]

Ansel Hall probably spent most of his first summer at Yosemite on duty in the information bureau. If so, he helped register 18,000 campers and answer questions from an estimated ninety percent of other park visitors. He was well placed to observe their interests and their reactions to the natural history specimens on exhibit. The next summer, the new nature guide service under Harold C. Bryant and Loye H. Miller generated more visitor questions about natural history. Enid Michael, wife of the Yosemite postmaster and an able botanist, maintained a large display of cut wild flowers at the entrance to headquarters. "So great was the interest in the flower show started last year that it was continued throughout the winter," the 1921 Park Service report stated. "Many have spent hours, notebook in hand, studying the exhibits."[13]

In 1920 Yosemite could foresee more space for its cramped museum. It would not have to wait on the long chance that Congress might appropriate the funds requested for a new headquarters building big enough to contain the exhibits. Director Mather had decided to have built at his own expense a rangers' clubhouse, which would be completed that fall. Then the bachelor rangers, presumably including Hall, could leave the old structure that served as their quarters and mess. It had been built about 1899 by Chris Jorgensen, a successful California artist, as a rustic home and studio. With moderate alteration the well-sited building could house the museum.

That September Superintendent Washington B. Lewis authorized Hall to proceed with preparations. The assignment did not include an appreciable budget, and Hall had to beg, borrow, and scrounge. The exhibit cases were of necessity homemade. He turned unneeded doors into exhibit tables and secured the donation of slabs from a lumber company operating near the park. Meanwhile he launched an aggressive acquisition program, seeking out appropriate specimens as gifts and loans. This was so successful that he could value the collection at more than $30,000 by the time the museum opened on June 17, 1922. It occupied six rooms designated respectively for history, ethnology, geology, natural history, botany, and trees of the region. By the end of the summer it had attracted more than 33,000

visitors. "Although quarters available are wholly inadequate, the museum has developed into a very creditable one," the superintendent reported.[14]

What Hall knew about curatorial work in 1920 had not come from formal museum training. Grinnell and his field staff had doubtless familiarized him with their techniques and standards in the preparation and recording of scientific study specimens. The Museum of Vertebrate Zoology, however, had little interest in exhibition. Harold Bryant and others of the nature guide project also knew how to collect, prepare, and record natural history specimens, but their primary interests lay in person-to-person educational activities. The character of the museum Hall created can be judged from contemporary photographs of the exhibit rooms and published items in *Yosemite Nature Notes*, an initially mimeographed periodical the park first issued in 1922 with Hall as editor.[15]

These sources reveal an understandably amateurish installation. The photographs show a plethora of objects in and atop cases, on and under open tables, along shelves and window sills, and hung on the walls. The display methods appear little influenced by concern for the preservation of the specimens, their didactic use, or their aesthetic effect. The objects were set out primarily to be looked at by visitors. Labeling appears minimal,

Yosemite National Park Museum, 1922-25. One of the exhibit rooms in the former Chris Jorgensen studio.

although some explanatory panels, maps, and pictures can be seen. The six room designations imply a systematic arrangement, but the photos indicate some mingling of subject matter. Evidently some of the exhibits were more fully developed. *Nature Notes* referred to a comparative display of Indian cradle baskets and another that showed obsidian arrow points along with pictures explaining how they were made. The arrow point display related to piles of obsidian chips visitors were likely to discover in the park, a studied effort to tie museum exhibits to field features.

From *Nature Notes*, it is also clear that the museum was not static. The accessions program was in full swing and what came in usually went on display. An injured pygmy owl picked up in the park was soon a mounted specimen on view. One visitor donated a prize trout he had just caught. Another promptly gave a specimen jar in which to display it. The museum had been open less than two months before visitors were asked to bring in live field mice and gophers to feed more than three dozen snakes of twelve species. Chief Ranger Townsley had even concocted a museum joke, the tanned skin of a feral house cat dyed black, that had visitors guessing. Evidently the new museum was active and popular.

The museum's unprofessional aspects, hardly abreast of the best current practice, engendered some curatorial problems for the future. One of the first large accessions, the Mitchell collection of Indian baskets, presented a novice curator with several potentially dangerous pitfalls. The material culture of the Indians who had inhabited Yosemite constituted a legitimate secondary subject for the museum. But the baskets ranged considerably beyond the park, and the Mitchells had a case built "to exhibit the entire collection."[16] If this was a condition of the gift, it set a precedent that hampered later curators in managing the Yosemite collections properly. The owners had been offered $400 for one particularly rare basket sought by the Smithsonian Institution. This created a circumstance likely to fan the natural acquisitiveness of a curator and color his judgment. An experienced curator would have negotiated with the Mitchells for a selective and unrestricted gift of the baskets clearly pertinent to Yosemite.

The Mitchell donation initiated a flow of Indian baskets that eventually became a burden to the museum. Within a year Chris Jorgensen gave many, most of Yosemite origin, from his large collection. The following year the park accepted from a woman in Kansas more than six hundred Indian artifacts, including Iroquois, Haida, Apache, and Pomo baskets.[17] In time the Yosemite Museum had many more Indian baskets than it could properly care for or use.

Ethnology was not the only secondary subject area into which the new park museum plunged. It also had a history room. A few aspects of Yosemite history, particularly those related to conservation and development of national parks, have truly national significance. But most of what

had happened in the Yosemite region since white men first penetrated the valley had little influence beyond that typical of local history anywhere. Although park visitors might find stories of Yosemite's past interesting, nostalgic, or even exciting, could they warrant the expenditure of time and money on the federal level implicit in extensive museum treatment?

Ansel Hall became fascinated with this history and began collecting its relics avidly. In the *Sierra Club Bulletin* he recounted how "a great number of mementos of the early days [had] found their way back to Yosemite, among them two old stagecoaches; a number of exceedingly interesting hotel registers; numerous souvenirs of . . . pioneers; relics of the golden days of '49; and arms and accouterments of the early days of Spanish California."[18] The results not only stocked a history room when the museum opened but contributed to influential trends that affected the Yosemite museum program and museum developments in other parks for many years. Perhaps Director Mather encouraged Hall in this direction, for in 1921 Mather received very favorably a suggestion for history exhibits at Yellowstone from the popular writer Emerson Hough.[19]

With all the attention Hall gave to history and ethnology he did not neglect natural history. For the museum's focal point he personally constructed a large relief model of Yosemite Valley, ten feet long with a scale of nine inches to a mile. He could not have chosen any exhibit closer to the basic significance of the park—the great glacial valley and the geologic story of its formation. It took him most of two winters to build using the facilities of the University of California's Forestry Division, where he had majored. It was molded and cast in time for the museum opening. He painted in the surface details with visitors watching. After that he used the model to illustrate daily museum talks on how geologic forces had created the spectacular landscape visitors came to see.

Several factors undoubtedly influenced Hall to select this project. Superintendent Lewis, much interested in the museum, was himself a topographer with wide field experience. In 1907 the U.S. Geological Survey had published a contour map of Yosemite Valley that provided data essential to the task. Francois E. Matthes, a USGS geologist who had done the topography for the map, had been engaged since 1913 in an intensive study of the park's geologic history. He had talked to park visitors on his research in the 1919 LeConte Memorial Lectures, and his conclusions, settling a long scientific debate, would soon be in print. Topographic models were in vogue. The new museum of the Buffalo Society of Natural Sciences opened in October 1920 with a model of its local area as a centerpiece. Yellowstone National Park received a relief map of the park as a welcome gift in 1921.[20]

Hall's energetic prosecution of his museum assignment led to promotion. He became Yosemite's first park naturalist on July 1, 1921. The new

title evidently did not carry with it an immediate workload of interpretation or supervision, for he soon left the park for a mountaineering expedition with his friend Francis P. Farquhar of the Sierra Club. On August 26 the two men became the first to reach the summit of the Middle Palisade in the Kings River region. Late the next day they came upon and camped with Chauncey J. Hamlin and his party, who were working their way along an unfinished portion of the John Muir Trail. The party had just built a section of the trail over Mather Pass, which they had named in honor of the director of the National Park Service.[21] This apparently chance meeting forged one link in a chain of circumstances that set park museums on the road to professionalism, as will be recounted in the next chapter.

At the close of the 1921 season Harold Bryant of the California Fish and Game Commission, on loan to the park to conduct the nature guide project for the second summer, formally recommended that the park assume full responsibility for the nature guide service and place a permanent staff member in charge.[22] He also recommended that someone be appointed to oversee similar work on a Service-wide basis. In keeping with Bryant's first suggestion, Hall provided continuity for the nature guide program leading up to the 1922 season and probably had some supervisory role that summer. His museum responsibilities must have received priority, however. The shortcomings of the old Jorgensen studio led him to begin soliciting funds for a new, fireproof structure. He persuaded Herbert Maier, a young architect trained at the University of California, to make and donate sketches to show what he had in mind. He had collected more than $7,000 in cash and pledges for the new museum building by the summer of 1923, when he learned that he would have an opportunity to go abroad for a year. To safeguard the money he obtained approval to set up the Yosemite Museum Association, the prototype for the cooperating associations now active in many parks.[23]

That August Hall was promoted again, to the new position of chief naturalist for the National Park Service. This action followed Bryant's second suggestion but did not result in a strong central supervision of naturalist work for some years. Other priorities intervened. The circumstances growing out of Chauncey Hamlin's meeting with Hall on the John Muir Trail had not yet run their course.

The final step in the beginnings of the Yosemite Museum also came in the summer of 1923. On June 10 Hall hired as a temporary assistant a biology teacher from the Reno, Nevada, High School. Ranger-naturalist Carl P. Russell quickly demonstrated his interest and aptitude in developing and managing the museum. A few months later, when Hall left for Europe, Russell obtained a leave of absence from the high school and assumed the duties of park naturalist. With Hall's promotion out of the staff, Russell succeeded to the permanent park naturalist post and to responsibility for the

museum. This marked a turning point in the history of curatorship in the Service. It formed another important link coming out of the Hamlin encounter.[24]

The development of the Yosemite Museum up to this point exemplifies what was going on in other natural parks. Similar factors led to curatorial activity. Within the same general time frame several parks reached the information bureau-with-exhibits stage and were calling for adequate museum buildings. A few additional examples will illustrate variations within the pattern.

In Sequoia Superintendent Walter Fry had begun collecting museum specimens at least by 1917. A forest fire that August burned down his residence/headquarters near Three Rivers. The loss included "over 4000 specimens of the flora of the Sequoia and General Grant National Parks that had been collected and prepared for use in an exhibit of the flora of the parks." At the end of the 1920 season Fry's successor, John R. White, reported: "The exhibit of wild flowers maintained by Mrs. Magly, assisted by other ladies, in the entrance to the superintendent's office was much admired and was of educational value both from botanical and administrative standpoints. . . . A similar exhibit of the cones and branches of sequoias, firs, pines, and other trees, shrubs, and flowers was of equal value. These exhibits form the nucleus of the Park Museum, to be established when appropriation is available for the necessary building."[25]

Fry, now U.S. commissioner for Sequoia, inaugurated a free nature guide service at Giant Forest under official sponsorship in 1922. That summer Ansel Hall donated a hundred Riker mounts and $10 for the wildflower exhibit. These made "a handsome addition to the Administration Building" but threatened to outgrow the available space.[26] The next summer the nature guide service staged a play to raise money for the museum. Director Mather attended the performance, which cleared $120. A Giant Forest Museum Association was organized to manage the funds. In 1924 the nature guides operated out of a little museum installed in a tent. The following year the museum was back in the administration building, which it eventually took over and occupied until 1966.

Early museum development in Yellowstone National Park differed in one respect from the previous example. The impetus came initially and persistently from outside the park staff. Milton P. Skinner was the prime instigator. While an undergraduate he spent the summer of 1898 at Old Faithful. The untrained guide hired by the hotel to explain the geysers seemed to him quite inadequate. Skinner occasionally substituted for this guide and discovered that there was no place in the park to obtain reliable information on the phenomena.

Skinner became a devoted student of Yellowstone's natural history. Returning to the park year after year, he worked as a nature guide and

lecturer for the hotels and later as a Corps of Engineers overseer on road construction projects. At some point he began active agitation "for an official government service including guiding, lecturing, information bureaus and museum."[27] Apparently the first hopeful reaction came about 1910. Yellowstone's acting superintendent at that time was Major Harry Benson, the same officer who had inherited Major Bigelow's arboretum and proposal for a museum at Yosemite in 1905. No direct link is documented, but Skinner learned that the park was considering the establishment of a museum at Mammoth Hot Springs and hoped to get $10,000 for a building. He redoubled his efforts at the park and in the winter of 1913-14 took his plea to the secretary of the interior.

Skinner's lobbying in Washington failed in its immediate purpose, but two actions followed. He was asked to write the park's first circular of information for visitors. Along with the rules and regulations it contained his checklist of Yellowstone birds. And the general superintendent and landscape engineer of the national parks called in 1915 for a study of surplus buildings at Fort Yellowstone with the intention of converting a suitable one into a park museum.[28] The recommendation bore fruit as soon as Horace M. Albright became superintendent of the park.

Superintendent Albright, who was Director Mather's close associate and shared his interest in the incipient park museums, promptly made Skinner a park ranger with the sole duty of developing an educational service for Yellowstone visitors. Appointed in October 1919, Skinner advanced to the prototype position of park naturalist in the spring of 1920. During his brief tenure the park adapted one of the Fort Yellowstone buildings as a base for the new educational program. This fine stone structure, formerly the bachelor officers' quarters, remained the central museum for the park thereafter and in 1979 was rededicated as the Horace M. Albright Visitor Center. For the 1920 season the park naturalist operated an information bureau in a small office, probably while the newly assigned building was being made ready. In 1921 the information bureau occupied the front room of the old bachelor officers' quarters and Skinner began developing a park museum in the room behind for the 1922 season. By the time he left in September 1922, the exhibits included more than 130 geological and paleontological specimens, more than eighty botanical specimens, and a few zoological items, all labeled with exceptional care from the standpoint of visitor needs.[29]

The homemade museum continued to grow after Skinner's resignation. In 1923 park rangers contributed three mounted mammals, someone else gave a mounted whooping crane, and additional cases were built. The next permanent park naturalist for Yellowstone, Edmund J. Sawyer, served from 1924 to 1928. Described as an artist-ornithologist, he evidently did some preparation work on the museum exhibits but concentrated his efforts

elsewhere. In 1925 Albright took the unusual step of appointing one of the park concessioners, Jack E. Haynes, as acting director of the museum. Haynes served the museum well, assuring its continued development and even constructing a working model of a geyser for the Old Faithful ranger station.[30] By the time his appointment ended in 1929 the team that had professionalized the museum program at Yosemite was at work in Yellowstone.

To cite a few other cases, Mount Rainier operated an information bureau in the superintendent's office at Longmire beginning in 1918 "for the purpose of informing visitors in regard to the flowers, trees, animals, and points of interest in the park." Professor J. B. Flett, the park ranger in charge, probably had at least a few natural history specimens on display. When a new administration building was complete in 1928, the old one became the park museum. This building, still containing exhibits dating from the 1920s, now constitutes a "museum of a museum." In 1918 Rocky Mountain National Park reported that a collection of plants would "be on file in the park office for reference and use by the public." Grand Canyon's superintendent stated in 1922 that collections of wildflowers and minerals from the park and photographs from other national parks were being assembled for exhibition in the information room.[31] The natural parks had discovered by then that exhibiting specimens gave them a powerful medium for serving the educational objectives the National Park Service was beginning to formulate.

Archeological Parks

Elements of crisis and conflict underlay the beginnings of park museums at archeological sites. As archeology matured into a science during the 19th century, it opened new vistas into the past. These glimpses of prehistory aroused widespread public interest, making ancient artifacts increasingly desirable acquisitions for collectors and museums. At the same time archeologists learned from experience how much information and insight they could gain by using continually refined, painstaking techniques of excavation and artifact research. Conversely, this emphasized how much potential knowledge was destroyed when amateurs vandalized sites in search of marketable relics.

During the 1880s public interest and professional concern began to focus on the spectacular Indian ruins of the Southwest. The growing population of this region and its increasing accessibility made the sites more and more vulnerable. The activities of the Wetherill brothers in mining the Mesa Verde cliff dwellings and selling their finds (1887–91) underlined a critical situation.[32]

Pressure grew to protect the prehistoric structures. In January 1889 several prominent citizens of Massachusetts including Governor Oliver Ames, John Fiske, Edward Everett Hale, William T. Harris, Mary Hemenway, Oliver Wendell Holmes, Mrs. Henry Cabot Lodge, Francis Parkman, and John Greenleaf Whittier appealed to Congress to protect the Casa Grande ruin in Arizona. It took Congress just over a month to appropriate $200 for repair and protection of the ruin and to authorize the President to reserve from settlement and sale the land on which it was situated.[33]

After Cosmos Mindeleff of the Geological Survey carried out initial repairs to Casa Grande in 1890–91, the General Land Office effected the reservation of the tract in 1892. When this action failed to provide adequate protection, the GLO appointed a resident custodian. Frank Pinkley, a 20-year-old Missourian whose uncle was U.S. land commissioner in Phoenix, entered on duty in December 1901. Until 1910, when he built an adobe house at the site, he lived in a tent. He guarded the ruin from molestation, greeted the occasional sightseeing travelers, and gave each party a conducted tour. From the start he collected and carefully saved whatever artifacts he found, but evidently he refrained from destructive pot hunting. When the GLO erected a corrugated iron roof over Casa Grande in 1903, the rooms inside the tower provided shelter for him to display these artifacts and use them in his explanations to visitors. So Casa Grande had an embryonic museum at least by 1905.[34]

Beginning in 1906 the Interior Department funded two seasons of archeological field work at the site. By arrangement with the Smithsonian Institution, J. Walter Fewkes of the Bureau of American Ethnology spent the winters of 1906–07 and 1907–08 excavating and making minor repairs. The first season's work revealed "a ground plan of 43 rooms surrounded by a court yard wall, the whole divided into several courts and plazas . . . [where] we had before only a ground plan of five rooms with no courts, plazas, or surrounding walls . . . ." Pinkley's delight at this success was tempered when Fewkes took the recovered artifacts back to Washington for the National Museum. He advocated keeping them where they had been found as a more effective way of disseminating the knowledge gained and promoting public interest in the site. He also recommended an appropriation of about $2,000 to build a museum at Casa Grande to house the finds of future excavations.[35] The Smithsonian replied by citing the law that "All collections of rocks, minerals, soils, fossils, and objects of natural history, archaeology, and ethnology made by . . . parties for the Government of the United States . . . shall be deposited in the National Museum." It did agree that a selection of Casa Grande artifacts "suitable for the instruction of visitors" might be made available if a proper place was provided.[36]

Fewkes' second season made equally impressive discoveries. Pinkley's annual report renewed his arguments for keeping the specimens at the site and his request for funds to build a museum. "This might be done under the present law by making it a branch of the National Museum," he suggested. His single-handed attempt to change policy failed, perhaps in part because it encountered attitudes charged by the 1904–06 controversy between the Smithsonian and the supporters of the Antiquities Act of 1906.[37] He repeated his request for museum construction money in 1909 and 1915, each time without success.

Pinkley continued to guard and interpret Casa Grande until 1915, when he resigned to serve as an elected member of the Arizona legislature. He resumed his custodianship in April 1918, four months before Casa Grande became a national monument, at the invitation of Director Mather of the National Park Service. Almost at once he wrote Mather urging that plans be made to erect a museum building. That summer he added graphic items to the artifacts displayed in the covered ruin. Mather's interest became evident when he personally contributed $210 to buy an appropriate collection Mrs. Pinkley had inspected in a Long Beach gift shop. Finally in 1921 the Park Service allotted Casa Grande $1,200 for a museum and office building. After modifying the plans provided, Pinkley constructed it during 1922 using Indian labor. He described it as 50 by 22 feet with "an office, a file and storage room, a museum room, a library and map room, and a small rest room," all of adobe with cement floors. In the same breath he again recommended the return of duplicates from the Fewkes excavations, "for the increased interest they will give the visitor is beyond computation."[38] By 1923 the new museum was in operation and evidently occupied most of the building.

The Casa Grande museum suffered a setback in September 1925, when a cloudburst raised flood waters above the level of the cement floors. The lower layers of the adobe walls disintegrated and the building collapsed. Fortunately, the museum collection suffered little damage. A prompt release of emergency funds enabled Pinkley to rebuild the walls and roof. He had the museum operating again within four months.[39]

The collection continued to grow. The Southwest Museum left more than half the finds from its 1927–28 Casa Grande expedition at the site. The Los Angeles County Museum also was generous with the results of its 1930–31 investigations. By 1932, when Casa Grande began to receive attention from the small central staff of Park Service museum professionals, Pinkley had already spent a quarter of a century in the active development and use of his museum. Treating it consistently as a feature of the guided tour, he had kept the exhibits in continual flux, adding or subtracting and rearranging specimens to adjust to visitors' responses. This pattern of use contrasted with what was happening in other park museums intended as

open learning situations in which visitors could move freely, stay as long as they wished, and pursue their individual interests.[40] Not surprisingly, Pinkley clung to the methods he had proven in practice and strove to keep his independence in curatorial matters. Neither is it surprising that the small, isolated staffs of the southwestern national monuments to whom "Boss" Pinkley provided superb leadership for many years reflected his attitude; nor that in some instances the defense of a position shaded into hostility or even subterfuge.

Independence in the second example of museum development in archeological parks took a somewhat different form. Mesa Verde became a source for museum specimens soon after discovery of the ruins. Artifacts gathered by local cowboys in at least eight forays between 1887 and 1892 found their way to the Colorado State Historical Society, probably to the University of Pennsylvania Museum, and elsewhere. A large collection obtained in 1891 under the direction of a young Swedish scientist, Gustaf Nordenskiold, is still in the National Museum of Finland. An initial attempt to provide some protection involved temporary withdrawal of the land from sale, but this failed to prevent continued rifling of the ruins. Under pressure from a Colorado women's organization, Congress created Mesa Verde National Park in 1906. A series of politically appointed superintendents in the years before the National Park Service became operational also fell far short of assuring adequate protection. The last of these, Thomas Rickner, serving from December 1913 to May 1921, did oversee the establishment of a museum in the park, even if under questionable circumstances. Meanwhile a program of scientific archeology began at Mesa Verde.

When Walter Fewkes finished his work at Casa Grande in 1908, he was detailed to Mesa Verde on a similar assignment. Also on the ground was Edgar Lee Hewett, traveling fellow of the Archaeological Institute of America and recently appointed director of its new School of American Archaeology. Hewett had led a 1907 survey of the Mesa Verde ruins for the Interior Department that resulted in recommendations for their excavation and repair. He was equally familiar with Casa Grande and shared with Frank Pinkley the belief that artifacts were most useful when preserved in a museum at the site. His Mesa Verde report included this recommendation. Nevertheless, at the end of Fewkes' first season in the park the secretary of the Smithsonian requested and the secretary of the interior granted that the artifacts he recovered be "committed to the permanent custody of the United States National Museum . . . ."[41] Fewkes shipped off to Washington the 1908 finds he felt worth preserving, except for some heavy objects too expensive to transport. He continued this practice each season (except during the war years) until 1923, when the Park Service succeeded in terminating his work there. Agitation to keep these artifacts at Mesa Verde

and to provide a museum for preserving and exhibiting them persisted from sources outside and within the park.

No advocate was more tenacious than Superintendent Rickner. His son-in-law Fred Jeep, whom he employed as a park ranger, was a dedicated pot hunter.[42] Like most pot hunters he lacked concern for the data that would make the artifacts of scientific value, but for the most part he apparently regarded his finds as park property rather than a source of personal gain. Rickner called for a museum to display Jeep's growing collection. In 1914 he complained to a Colorado congressman about the repeated delays in appropriating funds for development "until the improvement of the park has become a joke, and people here are skeptical about anything being done . . . ."[43] The congressman introduced a bill in 1915 to provide for building a park headquarters and museum in Mancos, but no action resulted.

Mark Daniels, general superintendent of national parks in 1914–15, became Rickner's next target. He urged Daniels to come see a cliff dwelling—named Daniels' House in his honor—newly discovered by Jeep and asked him for a cabinet to display the artifacts Jeep was extracting from it. This effort created an echo in the department's annual report calling for a museum, "even of the smallest kind," for Mesa Verde. In September 1915 Rickner directed his appeal for a museum to Stephen Mather, then acting as assistant to the secretary of the interior for park matters. "It has been a matter of wonder to tourists, and a disappointment to them, that there was no collection for them to examine . . . ," he wrote.[44]

Mather's initial response was undoubtedly disappointing but signally perceptive. He recalled a 1911 ruling that materials collected in connection with excavations and investigations in the park must go to the National Museum, but he suggested the possibility of arranging to display some duplicates. "In case it is found practicable to permit duplicate specimens to be kept in the park, I have to request to be advised as to exactly how they are to be preserved, at what place and in whose custody," he added. "Also whether it would be possible for the present park force to have the same properly marked and catalogued so that the traveling public in the reservation may know exactly what they are."[45] A year later Mather evidently distinguished between specimens recovered during official work on the ruins that had to go to the National Museum and those obtained by other means such as gift, purchase, or even Jeep's spare-time pot hunting. His 1916 report to the secretary urged construction of a museum at Mesa Verde and an active accession program to recover artifacts that had been removed from the park.[46]

In September 1916 Rickner asked Robert B. Marshall, Daniels' successor as superintendent of national parks, for approval to build an exhibit case. He reinforced the request by sending along as gifts a small

ceramic vessel and a stone ax from Jeep's collection. Rickner was allowed $22 for the needed case.[47] He installed it in the ranger station, a new log cabin located near the canyon rim where its large porch gave a fine view of Spruce Tree House. The next year an Interior Department inspector looked into the situation at Mesa Verde. "The Ranger Station . . . is used as a bedroom for Mr. and Mrs. Jeep and as a laundry for the camping company [Mrs. Jeep's concession] and on the porch, lying in the open, are a great many curios taken from the ruins," he reported.[48] Horace Albright, then assistant director of the National Park Service, visited soon afterward, and some changes followed promptly. Among them was the transformation of the ranger station into the museum Rickner had promoted so assiduously.

The park completed the conversion by the spring of 1918. One room then contained four wall cases and an aisle case displaying the prehistoric artifacts. The other room with a fireplace provided a lounge for visitors and space in which Fewkes could offer his evening lectures. This room also had an exhibit of twelve large framed photographs of Mesa Verde donated by the Denver & Rio Grande Railroad. Mather noted this accomplishment with some enthusiasm. He rated the museum "one of the most interesting features of the reservation . . . thoroughly enjoyed by the traveling public" and "only second in value of interest to the prehistoric dwellings themselves."[49]

C. Frank Brockman, a student of Park Service interpretive activity, considered the establishment of this museum as "perhaps the most important single event in the early history of National Park Service interpretation."[50] Here the Service directorate observed and acknowledged the educational effectiveness of a site museum in a park and shortly obtained valuable insights into curatorial problems and standards. In fact, the Mesa Verde museum in 1918 was a not very creditable assortment of undocumented specimens gathered in defiance of archeological practice and deposited in display cases without proper order or explanation. In 1919 Fewkes and his assistant, Earl Linton, took time to work with Jeep to record as much information as he could remember about where and when he had found the artifacts. Two years later a new superintendent promised to keep after Jeep to complete the catalogue.[51]

The Park Service replaced Superintendent Rickner in 1921 with an exceptionally well-qualified archeologist. Jesse Nusbaum, appointed in spite of political pressure for other candidates, had worked for years with Edgar Lee Hewett in the School of American Research and the Museum of New Mexico. He had helped in an archeological survey at Mesa Verde as early as 1907 and had repaired Balcony House under Hewett's direction in 1910–11. He was knowledgeable, energetic, and versatile and had a wife with artistic talent. He promptly put a stop to Jeep's pot hunting and set out to make the park museum respectable. As he wrote Mather, "We want a

museum here that can stand the acid test of the scientific man . . . ."[52] The standards of curatorial work and exhibition he had in mind were those he was familiar with at the Museum of New Mexico, the Museum of the American Indian in New York, and the National Museum.

The park museum obviously ranked high in the new superintendent's priorities. During the winter of 1921–22 Mrs. Nusbaum with the help of a ranger "cleaned and reinstalled the museum collections according to the most modern museum methods . . . ." This was accomplished while the Nusbaums were also designing and building a residence so the superintendent could work in the park year round and were preparing a complete new scheme for the development of park facilities. At the same time they designed and constructed new furniture for the museum and the superintendent's new house. When rain within a few months of his arrival brought many flowers into bloom, he had specimens of more than a hundred species collected, identified, and prepared for display in the museum. He also laid the ground for a new fire-safe museum building.[53]

Stella M. Leviston of San Francisco made her first visit to Mesa Verde in 1921. She enjoyed her stay and offered the park $1,000 to pay for a suitable stone gateway at the entrance. Nusbaum persuaded her that the park needed an adequate museum building more than a gateway. She agreed, doubled the amount of her gift and, as plans matured, added at least another $1,000 to ensure construction of the first wing. Her generosity and the superintendent's zeal attracted other donors including John D. Rockefeller, Jr., who matched her beneficence. With a "fireproof" building clearly in prospect Nusbaum included two pertinent recommendations in his annual report: that the National Museum return its Mesa Verde specimens to the park and that all archeological artifacts collected from the park in the future become park property.[54] The first unit of the new museum opened in 1925.

Under Nusbaum the museum and its collections continued to expand and the exhibits to improve, even without the return of material from the Smithsonian. He assigned and trained personnel to carry on curatorial and preparation work and to operate the museum. When he left the Park Service temporarily in 1930 to head the new Laboratory of Anthropology Rockefeller funded at Santa Fe, the Mesa Verde Museum remained in the care of a well-prepared staff. Responsibility for the museum fell particularly to Paul R. Franke, park naturalist and later assistant superintendent and superintendent. He in turn was ably assisted and followed in care of the museum by Donald C. Watson, a seasonal historian who in time headed the permanent park interpretive staff.

During the 1930s they continually developed and refined the exhibits using the skills of the regular staff, personnel of the park's Civilian Conservation Corps camp, and other emergency relief workers. They

planned and produced didactic displays using objects and graphics in keeping with the latest museum practice and made several very creditable dioramas, a complex type of exhibit that had recently become popular. Only occasionally did they request technical help from the Service's expanding central pool of museum specialists. The Mesa Verde Museum matched the best museums in other parks in the quality of its collections, exhibits, and curatorial practice. The self-sufficiency that characterized it caused minimal friction with the central museum establishment because no serious disagreement existed over professional standards or policies. Mesa Verde capped the archeological line of early museum development in the national parks.

Historical Parks

When the National Park Service came into existence in April 1917, the system of 15 national parks and 21 national monuments it administered included only four small areas set aside primarily for their significance in American history (as opposed to prehistory). These were Gran Quivira and Tumacacori, two ruined missions of the Spanish colonial frontier; El Morro, a prominent rock outcrop into which Spanish and Anglo-American travelers of earlier centuries had carved records of their passage; and Sitka, the site of a battle between Russian traders and Alaskan natives. Only three more historic sites were added before 1930: Verendrye in 1917, Scotts Bluff in 1919, and Pipe Spring in 1923. All the historical units were national monuments, for which the Service received very scanty funding. In most cases it could afford neither regular staffing nor development. Only one of the historical areas generated any sort of museum before 1930.

This solitary example was a direct offshoot of the archeological museum line. In 1919 Edgar Lee Hewett obtained a permit to excavate at Gran Quivira National Monument, and his School of American Research continued work there for a number of years. Gran Quivira became a direct responsibility of Frank Pinkley in 1924 when he was designated superintendent of the Southwestern National Monuments organization. Both Hewett and Pinkley were strong advocates of site museums as the proper repositories of archeological specimens. The beginnings of a collection were reported in 1925, and by 1929 Gran Quivira had a little museum in operation. In line with Pinkley's concept, its custodian showed and explained the unlabeled and mostly uncased objects to visitors as part of the ruins tour.[55] This modest achievement hardly foreshadowed events that began to unfold the next year.

The Park Service acquired its first responsibility for historical areas east of the Mississippi in 1930. Within three and a half years it had 22 such parks in the East. They brought a range of problems with which the Service

was ill-prepared to cope. The study and practice of historical architecture, an essential tool for the tasks ahead, lacked accepted canons. Historical archeology, which held the answer to crucial questions, scarcely existed as a discipline. The Service did not have a single historian on its staff until 1931, and hardly any historians were trained to deal with historic sites. From the museum standpoint the situation introduced three especially complicating factors: obligatory collaboration with non-governmental organizations having their own interests, objectives, and standards; the need to take over existing museums with unresolved curatorial difficulties; and development and operation of furnished historic structure museums, a fledgling medium new to Service experience. The first venture encountered memorable pitfalls.

A group of patriotic citizens formed the Wakefield National Memorial Association in 1923 for the purpose of "restoring" George Washington's birthplace and the nearby burial ground of his ancestors. The organizers aimed to complete the project in time for the bicentennial of Washington's birth in 1932. Because the government owned the plot of land where the birth house had presumably stood before it was destroyed by fire in 1779, the association obtained authority from Congress in 1926 to build, maintain, and operate a replica of the house on its original site. Fund-raising and architectural planning proceeded, but a second appeal to Congress became necessary as time and money ran out. A 1930 act granted the association $50,000 to help finish construction and landscaping and stipulated that upon completion the property should become part of the national park system as George Washington Birthplace National Monument. The Park Service cooperated in the work until the formal transfer of administration in May 1932.[56] Then it had on its hands a kind of museum for which it had no firm policies. Furthermore, the reconstruction proved to be on the wrong site and to bear little resemblance to the birth house. The fault lay mostly in the state of the arts of historical architecture and historical archeology, but the embarrassment remained. So did the problem of honest interpretation.

The Service owned and operated the museum, but the Wakefield Association continued to exercise responsibility for the furnishings. The house had opened furnished with reproductions. Their replacement with appropriate antique examples began in earnest when Louise du Pont (Mrs. Francis B.) Crowninshield became association president in 1935. The Service was fortunate in this relationship because she proved as knowledgeable in the field of American antiques as her brother, Henry Francis du Pont of Winterthur. While she carried on the slow, costly task of choosing and purchasing items needed to furnish the house, however, the provisional nature of accessions left questions of legal ownership unresolved and postponed effective cataloging. The situation also tended to place policy

decisions regarding the care and security of the furnishings in the hands of the association.[57]

In 1936 the Service began an archeological study of foundations discovered nearby in 1930 after the association had carried its construction project too far, it decided, to turn back. This investigation persuaded nearly everyone that "Building X," rather than whatever had stood on the site of the newly reconstructed building, was Washington's birth house. The excavations provided curator J. Paul Hudson with a multitude of specimens needing to be preserved, recorded, stored, and perhaps exhibited. During the year of his assignment at Wakefield he was able to install a small temporary museum in part of the reconstructed kitchen displaying artifacts from the dig. He also developed plans for more permanent exhibits but had to leave a large backlog of other curatorial work.

Barely six months after authorizing George Washington Birthplace National Monument, Congress took similar action on a much bigger Virginia project, Colonial National Monument (retitled Colonial National Historical Park in 1936). This enactment required the Service to preserve the site of the siege of Yorktown, preserve the unprotected part of the site of Jamestown, and connect both sites with Colonial Williamsburg by means of a parkway. Yorktown received priority because the sesquicentennial of the surrender was almost at hand. A commission was planning the commemoration, which would include a reenactment.

The pressing needs at Yorktown hastened the appointment of the first Park Service historians in 1931. Four men hired that year from the Civil Service register were well prepared to work with historic documents, but artifacts and the features of historic sites presented them with unfamiliar material. Verne E. Chatelain joined the small staff of the Branch of Research and Education in Washington to promote and guide historical enterprise throughout the park system. The other three—William M. Robinson, Jr., B. Floyd Flickinger, and Elbert Cox—were assigned to Colonial National Monument, where they got an immediate taste of curatorial work. For the Yorktown Sesquicentennial they had to handle an exhibition on the national parks involving specimens and models that had to be borrowed and returned.

Robinson became the park superintendent but lacked managerial aptitude and soon left. Flickinger succeeded him as superintendent and held the position through several stormy years until Elbert Cox was recalled to administer the park in 1939. Flickinger's incumbency witnessed much museum activity, in which he took a personal interest.[58] The park was assigned five Civilian Conservation Corps camps, giving it a thousand workers and about fifty technicians. The superintendent had to keep this big emergency relief staff productively busy on park development projects. In this situation he found it expedient to work often without consulting the

Washington headquarters or following established planning and review procedures. Haste and shortcuts tended to deemphasize quality considerations and fostered antagonisms that also characterized Flickinger's relations with the two principal outside organizations particularly concerned with the new park: Colonial Williamsburg and the Association for the Preservation of Virginia Antiquities.

In this contentious atmosphere four noteworthy museum developments took place. The Augustine Moore House, where representatives of the British and Allied armies met to draft the surrender terms in 1781, still stood at Yorktown. John D. Rockefeller, Jr., bought the house for safekeeping until the government could acquire it for the park and had Colonial Williamsburg's architectural restorers spruce up its appearance for the sesquicentennial. Upon acquiring it the Park Service did a more thorough restoration, after which the park became responsible for furnishing it for exhibition. Although Colonial Williamsburg was immersed in its great historic furnishing project and the Moore House fell within the scope of its accumulated expertise, collaboration seems not to have occurred. The park turned instead to various patriotic organizations for help.[59] It persuaded the Daughters of the American Revolution to furnish the surrender room, the Daughters of the Cincinnati to take on the dining room, and the Children of the American Revolution to furnish the family parlor. As at Wakefield these arrangements gave the park minimal control over the selection and placement of the furnishings. The problems remained years later when authentic replication of the historic scene took precedence over aesthetics in cultural resource management policy.

The second museum development came at the reconstructed Swan Tavern. After shifting from one building to another as architectural work in the town proceeded, the park's Yorktown exhibits finally occupied the tavern. The local staff designed and largely prepared them in deliberate independence of the growing professional resources available from the Service's central museum staff. The quality of the exhibits suffered in technical and some other respects, and the competitive rather than cooperative attitude absorbed by park staff lingered as individuals transferred to other areas. On the other hand, the Yorktown museum bore no resemblance to exhibit practices common in local historical museums. It displayed no cluttered mixture of relics but responded to newer concepts that were influencing museums throughout the park system. The Yorktown historians, trained to think of history in narrative terms, set out to use exhibits as a medium for telling visitors the story of the town and siege. They used models, maps, and other graphics to supplement specimens obtained from excavations and plenty of labels, often lengthy. As an important and innovative adjunct to the museum, park technicians converted the interior of the reconstructed Swan Tavern stable to a partial replica,

principally of the gundeck and captain's cabin of one of the British frigates that had sunk in the York River during the siege.[60] This became the setting for material salvaged from the wrecks in a cooperative undertaking with the Mariners Museum at Newport News.

More significantly innovative, the third museum development took place at Jamestown. The Association for the Preservation of Virginia Antiquities had owned the upstream end of Jamestown Island since 1893. Its area contained the known remains of the first settlement and included a small museum in the Relic House. In 1934 the Park Service acquired the rest of Jamestown Island and began to probe for further buried evidence of the 17th-century town. The park initially failed to establish a cooperative relationship, and the APVA felt threatened. Then in 1936 Frank Setzler of the Smithsonian Institution encouraged the park to hire Jean C. (Pinky) Harrington, a former architect who had recently earned a Ph.D. in archeology from the University of Chicago. He took over the Jamestown excavations and in the ensuing years contributed very largely to making historical archeology a rigorous and effective field of study. Virginia Sutton, another University of Chicago archeologist who had worked two years at Mesa Verde National Park, joined the project in 1937 (and later became Mrs. Harrington). She added a strong, knowledgeable drive to make the Jamestown program as interpretive as it was scientific. The high board fences that had surrounded the excavations came down, and the public was welcomed to observe and question.

By 1938 the park had erected a temporary but substantial building at Jamestown as an archeological laboratory and storehouse. Harrington and Sutton invited visitors into two small exhibit rooms that provided orientation to the Jamestown story and told what was going on currently in the dig. Afterward they could look through windows into storerooms filled with excavated artifacts and the laboratory where staff were cleaning and recording finds, then go out to watch the excavations in progress. The building remained in use for about 18 years as one of the Service's most effective museums.[61]

Meanwhile during the 1930s the excavations at Jamestown and Yorktown stimulated the fourth aspect of museum activity in the park. Curatorial research, the study of the specimens in museum collections to extract as much knowledge as possible from them, has probably received less emphasis in the Park Service than any other phase of its museum operations. Yet staff members at Colonial, most of them CCC technicians, made a strong start in this direction. Worth Bailey produced nine artifact research papers in 1936–38; his report on Jamestown pewter was among those published.[62] Alfred F. Hopkins and Thor Borresen also prepared reports based on their research, while Harrington contributed importantly to the dating of clay tobacco pipes.

Jamestown Archeological Laboratory and Museum, Colonial National Historical Park, 1938-56. This temporary structure included two small exhibit rooms and a public walkway with view windows into laboratory and collection storage rooms.

Two more examples of museum beginnings in historical parks call for attention. Morristown National Historical Park, authorized by Congress in1933 and the first area so designated, gave the Service another furnished historic structure museum to develop and administer. Unlike the Washington birthplace reconstruction and the Moore House at Colonial, the Ford Mansion was already venerable as a museum. The Washington Association of New Jersey, another outside organization with which the Service would have to work, had acquired the mansion in 1874 and maintained it for sixty years. The association had filled the house with a valuable collection of furnishings, military artifacts, and Washingtoniana in recognition of its role as George Washington's military headquarters during the winter encampment of the Continental Army in 1779–80. A curator, the niece of an association president, watched over the collection, which included many items outside the proper scope of the new park and a few especially treasured objects of questionable authenticity. The circumstances offered endless opportunities for conflict between the Service and the association. Instead, generally harmonious and fruitful collaboration characterized their relations. This happy state, which still persists, resulted in part from the unusual nature of the association and the caliber of its leadership, but also from the talents of the park's first superintendent, Elbert Cox.[63]

The final example comes from the National Capital Parks. When the Service absorbed the agency administering the federal parks and reserva-

tions in the District of Columbia in 1933, it took over the Lincoln Museum. Recently moved to the Ford's Theatre building, the museum had existed since 1893 in the house across the street where Lincoln died. For most of that time Osborn H. Oldroyd, a Civil War veteran, had operated it as a private museum with himself as curator and custodian. In 1926, at the direction of Congress, a high-level commission bought the collection from Oldroyd for $50,000. Congress acted in spite of a Smithsonian report questioning the collection's historical value, and no one inventoried it at the time of purchase. Oldroyd continually made purchases, solicited gifts, and accepted loans, but also lost items by pilfering and deterioration.[64] The Lincoln Museum forced the Service to deal with an inadequately documented collection of several thousand specimens, including many of limited value, dubious authenticity, and deteriorated condition. The status quo was entrenched in a longstanding tourist attraction. Decades would pass before the Service could take much satisfaction in the curatorial condition of the Lincoln Museum.

The cases cited suggest the pattern of early museum development in the historical parks. While the Service tried with varying success to cope with these new problems, it obtained with the Historic Sites Act of 1935 its first clear legal authority to operate museums.[65] During the same period of these historical accretions the Service was also attaining a measure of curatorial professionalism generated by events centered first at Yosemite National Park.

NOTES

1. U.S. Department of the Interior, *Annual Reports of the Department of the Interior for the Fiscal Year Ending June 30, 1904* (Washington: Government Printing Office, 1904), p. 397. Hereinafter cited as *Interior Annual Reports for (year)*.

2. *Interior Annual Reports for 1904*, pp. 387, 394.

3. O. L. Wallis, "Yosemite's Pioneer Arboretum," *Yosemite Nature Notes* 30, no. 9 (September 1951): 83-85.

4. Joseph Grinnell and Tracy Irwin Storer, *Animal Life in the Yosemite* (Berkeley: University of California Press, 1924), pp. v-vi, 2.

5. Grinnell, *Joseph Grinnell's Philosophy of Nature: Selected Writings of a Western Naturalist* (Berkeley: University of California Press, 1943). See particularly "The Methods and Use of a Research Museum" (1910) and "The Museum Conscience" (1921).

6. Grinnell and Storer, *Animal Life in the Yosemite*, p. vi.

7. *Interior Annual Reports for 1915*, pp. 814-15, 853; *Joseph Grinnell's Philosophy of Nature*, p. 38.

8. Hall graduated from the University of California in 1917 with a major in forestry and a reserve commission in the Army Corps of Engineers. While waiting to be called up he got a job as park ranger in Sequoia National Park. He spent a strenuous summer building trails, patrolling, and fighting forest fires. He served in France with a forestry unit for the remainder of the war.

9. Jenks Cameron, *The National Park Service: Its History, Activities and Organization* (New York: D. Appleton and Co., 1922), p. 17.

10. U.S. Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year Ending June 30, 1917* (Washington: Government Printing Office, 1917), pp. 12, 14, 253-55. Hereinafter cited as *Report of the Director for (year)*.

11. *Report of the Director for 1918*, pp. 49, 73; same for 1919, pp. 30-31; same for 1920, p. 59; National Parks Educational Committee, *Proposed Statement of Objects, July 1918*, Philosophy of Interpretation 1917-47 folder, History of Interpretation 1936–50 box, NPS History Collection, Harpers Ferry Center Library.

12. Cornell University began publication of its nature study leaflets in 1896. Audubon societies formed their national association in 1901. Teacher training authorities organized the American Nature Study Society in 1908. Various museums, such as the Buffalo Society of Natural Sciences, had been conducting nature study activities for children and adults since the 1890s and earlier.

13. *Report of the Director for 1921*, p. 202. A photograph of the flower display accompanies C. Frank Brockman, "Park Naturalists and the Evolution of National Park Service Interpretation through World War II," *Journal of Forest History* 22, no. 1 (January 1978).

14. Hall, "The Educational Development of Yosemite National Park," *Sierra Club Bulletin* 11 (1920-23): 416; *Yosemite Nature Notes* 1, no. 1: 3; *Report of the Director for 1922*, p. 114. Later Hall valued the collection in the spring of 1922 at between $10,000 and $15,000 (letter to Francis P. Farquhar, Oct. 25, 1926, folder 362, box 70, Carl P. Russell Papers, Washington State University Library).

15. See photographs in *Report of the Director for 1922* and Hall, "The Educational Development of Yosemite National Park."

16. *Yosemite Nature Notes* 1 (July 10, 1922): 4.

17. Ibid. 3 (May 31, 1924): 3-4.

18. "The Educational Development of Yosemite National Park," p. 415.

19. "This idea appealed to me instantly, and I hope that such historical exhibits as may be appropriate to each park may be procured and installed soon. Contributions of objects for the historical collections will be solicited in regions about the parks and among their friends, and full recognition will be given to all who aid in this praiseworthy enterprise" (*Report of the Director for 1921*, pp. 36-37). Mather's final sentence foreshadowed a continuing curatorial problem.

20. *Report of the Director for 1921*, p. 16.

21. Farquhar, "First Ascent of the Middle Palisade," *Sierra Club Bulletin* 11 (1922): 264-70.

22. *Report of the Director for 1921*, p. 213.

23. Hall to Farquhar, Oct. 25, 1926.

24. Letter, Russell to C. Frank Brockman, Dec. 5, 1945, 921.2/zp-7, Yosemite National Park Research Library.

25. *Report of the Director for 1917*, p. 158; same for 1920, p. 265.

26. Superintendent's Monthly Report, September 1922, Sequoia National Park files.

27. Letter, Skinner to Carl P. Russell, Jan. 25, 1932, folder 362, box 70, Russell Papers.

28. *Interior Annual Reports for 1915*, pp. 856, 886.

29. Albright reported "47 exhibits in the igneous rock case, 43 exhibits in the geyserite case, 41 exhibits in the petrified wood case, 2 mounted animal heads, 1 mounted eagle, a case illustrating beaver work and containing 4 exhibits, a contorted tree, 2 specimens of minerals, and 80 exhibits of pressed and dried flowers" as of September 20 (*Report of the Director for 1922*, p. 108).

30. Carl P. Russell, "Scientific Investigations in Yellowstone National Park," mimeograph c. 1933, p. 8.

31. *Report of the Director for 1918*, pp. 157, 180; same for 1922, p. 148.

32. Ronald F. Lee, *The Antiquities Act of 1906* (Washington: National Park Service, 1970), p. 1; Ricardo Torres-Reyes, *Mesa Verde National Park: An Administrative History, 1906-1970* (Washington: National Park Service, 1970), pp. 5-6.

33. Lee, *Antiquities Act*, pp. 18-19; Sallie Van Valkenburgh, "The Casa Grande of Arizona as a Landmark on the Desert, a Government Reservation, and a National Monument," *The Kiva* 27, no. 3 (February 1962): 11.

34. Letter, Pinkley to Commissioner, GLO, Mar. 1, 1902, ms. addendum to Form Report, typed copy in Casa Grande file, NPS History Collection; letter, Pinkley to Ansel F. Hall, Apr. 18, 1934, Casa Grande Ruins National Monument.

35. Pinkley to Commissioner, GLO, July 23, 1907, Casa Grande Reports, Annual 1902-27, 207-01.4, Record Group 79, National Archives.

36. Letter, R. Rathbun to Secretary of the Interior, Sept. 13, 1907, ibid.

37. Pinkley to Commissioner, GLO, Nov. 4, 1908, ibid.; Lee, *Antiquities Act*, p. 61.

38. *Report of the Director for 1922*, pp. 69, 155.

39. Van Valkenburgh, "The Casa Grande of Arizona," p. 23.

40. Edward P. Alexander, *Museums in Motion* (Nashville, Tenn.: American Association for State and Local History, 1979), p. 165.

41. Torres-Reyes, *Mesa Verde National Park*, p. 87.

42. Ibid., pp. 119-20. Rickner's nepotism also involved his daughter, who secured the concession for Spruce Tree Camp, the principal accommodation for Mesa Verde's visitors.

43. Letter, Rickner to Rep. Edward T. Taylor, Mar. 25, 1914, cited ibid., p. 65.

44. *Interior Annual Reports for 1915*, p. 856; letter, Rickner to Mather, Sept. 27, 1915, cited in Torres-Reyes, *Mesa Verde National Park*, p. 89.

45. Letter, Mather to Rickner, Oct. 20, 1915, cited in Torres-Reyes, *Mesa Verde National Park*, p. 90.

46. Mather, *Progress in the Development of the National Parks* (Washington: Department of the Interior, 1916), p. 27.

47. Torres-Reyes, *Mesa Verde National Park*, pp. 92-93. Later Park Service administrators occasionally took similar questionable advantage of interest-arousing specimens within their control, with less excuse after such practices were proscribed by clear standards of curatorial ethics.

48. Memorandum, John A. Hill to Horace M. Albright, September 1917, cited ibid., p. 68.

49. Ibid., pp. 93-94; *Report of the Director for 1919*, p. 31; same for 1920, p. 59.

50. "Park Naturalists and the Evolution of National Park Service Interpretation," p. 29.

51. Torres-Reyes, *Mesa Verde National Park*, pp. 179-80.

52. Ibid., p. 180.

53. *Report of the Director for 1922*, p. 134; same for 1921, pp. 86, 235.

54. *Report of the Director for 1922*, p. 136.

55. *Report of the Director for 1925*, p. 48; same for 1929, p. 156.

56. Charles E. Hatch, Jr., *Chapters in the History of Popes Creek Plantation* (Washington: National Park Service, 1968), pp. 139-61.

57. Ibid., pp. 162-63. It was observed as late as about 1960 that Mrs. Crowninshield, apparently after repeated pilfering, had directed the tableware in the reconstructed kitchen to be fastened to the table with screws and wires and relied on her chauffeur to keep the intrusion alarm system for the house in operation.

58. Flickinger, "Historical Methods Used in the Development of Colonial National Monument," paper presented before American Planning and Civic Association, Washington, D.C., Jan. 23, 1936, Colonial National Historical Park box 3, NPS History Collection.

59. Memorandum, Stanley Abbott to Regional Director, Aug. 12, 1958, Moore House folder, Colonial NHP section, Vera Craig Files, Division of Reference Services, HFC.

60. Edward M. Riley, "The History of the Development of Colonial National Historical Park," Apr. 30, 1936, typed report, box 2, Colonial NHP files, NPS History Collection.

61. Interview with Jean and Virginia Harrington by Charles B. Hosmer, Jr., May 18, 1970, transcript in NPS History Collection; Virginia H. Sutton, "Special Report on the Educational Work at Jamestown, Colonial National Historical Park," 1938, Jamestown box, Colonial NHP files, NPS History Collection.

62. Bailey, "Joseph Copeland, 17th Century Pewterer," *Antiques Magazine* 33, no. 4 (April 1938): 188-90.

63. Joseph Fulford Folsom, *History of the Washington Association of New Jersey* (Morristown: Banner Press, 1930), pp. 41-42; transcript of Cox interview by Charles B. Hosmer, Jr., May 7, 1970, p. 21, NPS History Collection; transcript of Cox interview by S. Herbert Evison, March 1971, p. 18, NPS History Collection.

64. George J. Olszewski, *House Where Lincoln Died Furnishing Study* (Washington: National Park Service, 1967), pp. 34-35; James T. Mathews, Jr., *History of the Lincoln Museum* (Washington: National Art Service Co., 1935).

65. Public Law 74-292, U.S. *Statutes at Large* 49: 666.

PHILANTHROPY AND GUIDANCE, 1924–1934

The potential of park museums, particularly as instruments of outdoor education, captured the interest of several very able men in the 1920s. Their leadership and support transformed the scattered beginnings outlined above into an integrated chain of museums uniquely adapted to a defined purpose. What started as largely individual efforts by devoted amateurs to meet evident needs became a coordinated professional enterprise. These leaders moved the National Park Service program into the mainstream of American museum activity. They endowed it with a body of creative concepts, standards of practice, central direction, and a growing staff trained to develop and operate museums. This phase of Park Service curatorial history, largely financed by the Laura Spelman Rockefeller Memorial, culminated in the organization of the Museum Division in 1935. Its initial catalyst was Yosemite National Park naturalist Ansel Hall.

The Yosemite Museum

The High Sierra encounter of Ansel Hall and Francis Farquhar with the Hamlin party on August 27, 1921, may have been entirely fortuitous, although the party had apparently visited Yosemite briefly and met Hall en route to Sequoia. Hall and Farquhar evidently knew whose camp they were approaching. As Chauncey Hamlin remembered the occasion years later, he heard a voice calling out of the twilight, "Mr. Hamlin! Mr. Hamlin!" He then saw the two men coming toward the campfire. Hamlin did not recall that Hall expounded his hopes for a Yosemite museum better than the Jorgensen studio during their conversation that evening, but he opened doors and made an impression.[1] The nature of the man who in due course reacted to the impression is significant to the results.

Chauncey Jerome Hamlin, born in Buffalo in 1881, inherited adequate means to pursue his interests. At Yale he played football and won election to Phi Beta Kappa. Graduating in 1903, he studied law at Buffalo and was admitted to the bar in 1905. He went to the Mexican border with his National Guard regiment in 1916, rose to captain, and accompanied the regiment to France in 1918. Back in Buffalo in 1919 he decided that rather than reopen his law practice he would devote himself to some form of public service. His father-in-law, David Gray, had been a founder of the Buffalo Society of Natural Sciences, and Hamlin had served briefly on its board of managers before his mobilization. He resumed his seat, and the next year the society elected him president. He held the office 28 years during which he gave much of his time and some half-million dollars to the society's major undertaking, the Buffalo Museum of Science.[2]

Chauncey J. Hamlin. As president of the American Association of Museums, he secured funding and organized projects to demonstrate the potential of park museums. (Courtesy Buffalo Museum of Science.)

Hamlin also became interested in parks. In 1920 he and his wife bought forty acres in the Giant Forest at Sequoia for donation to the park. If the Hamlins had not already met Stephen T. Mather, they soon did. Within a few months Director Mather paid a brief visit to Buffalo and declared the exhibits he saw in the society's museum "wonderfully informative."[3] Mather also lent his support to the creation of Allegany State Park, in which Hamlin was deeply involved. The Buffalo Society of Natural Sciences published in its magazine articles by Mather and Farquhar on the

proposed Sequoia-Roosevelt National Park, then made a nationwide distribution of reprints as a favor to the Park Service.[4] Ansel Hall happened upon fertile ground well prepared for sowing the seed of his Yosemite Museum dream.

Hamlin did not forget about Yosemite's museum needs in the two years following his meeting with Hall. A personal matter took precedence, however. After the Hamlins' son graduated from preparatory school in 1923, his parents felt that he should travel extensively in Europe before entering college. They needed a suitable companion for him and picked Hall. Given a leave of absence from the Park Service, Hall left Yosemite at the end of August 1923 and did not return to the park until the following August. In his absence Hamlin marshaled support for the Yosemite museum project.[5]

Having become a member of the American Association of Museums in 1921, Hamlin found himself promptly made a vice president and chairman of the committee on association finances. Within two years he secured a matching grant that enabled the AAM to set up a permanent paid staff with offices in space offered rent-free by the Smithsonian Institution. After the association elected him its president in 1923, he had a strategic base for rallying supporters of museums in parks.

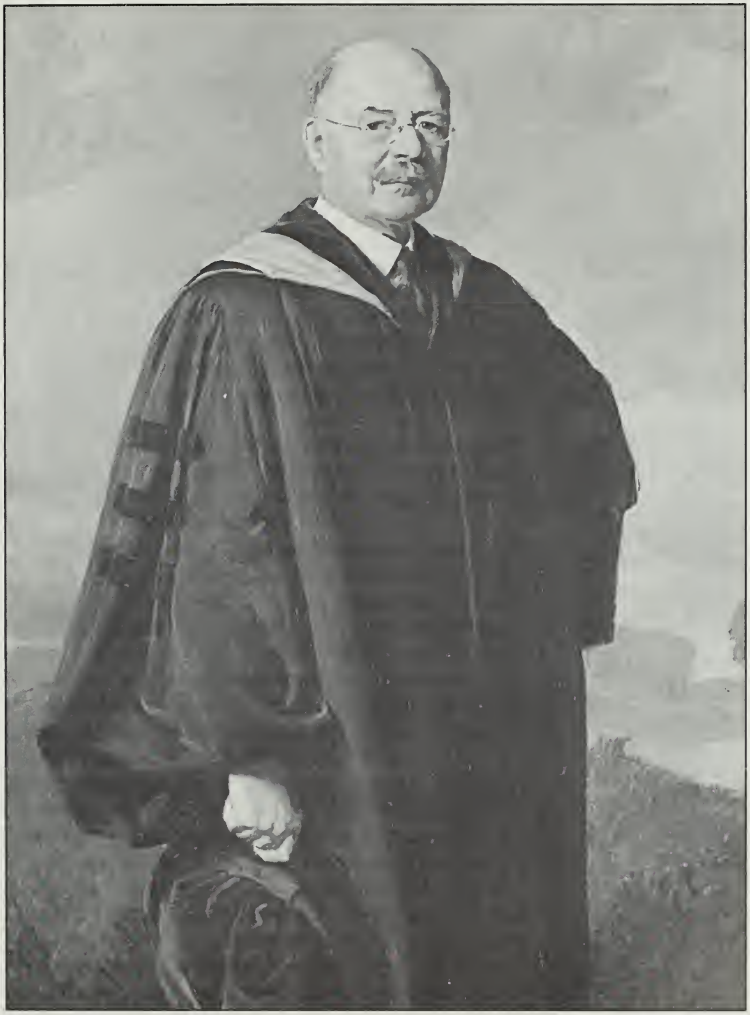
Association business took Hamlin to the offices of the Laura Spelman Rockefeller Memorial. While sitting with its director waiting for some papers to be fetched, he spoke casually of Yosemite's museum needs. To his surprise the director expressed interest. Hamlin went straight back to Washington and set up an AAM Committee on Museums in National Parks, later called the Committee on Outdoor Education, with himself as chairman. Its membership included directors, curators, and scholars highly respected in the scientific world and the museum profession. The Park Service was to become particularly indebted to several of the members, including Hermon C. Bumpus, John C. Merriam, and Clark Wissler. The committee weighed the educational potential of the national parks "and developed certain concrete plans looking toward the establishment of small natural-history museums in a number of the larger parks."[6]

The AAM presented these proposals to the Laura Spelman Rockefeller Memorial and secured two grants. One in the amount of $5,000 enabled the committee to continue its work. The other, for $70,500, was designated to build and equip a museum for Yosemite as an experiment and example of the committee's ideas. Hamlin radioed the good news to Ansel Hall in July 1924 as the ship carrying him and young Chan Hamlin approached New York. He then appointed Hall executive agent of the AAM for the Yosemite project.[7] Hall was sent first to Duxbury, Massachusetts, to the home of Hermon Bumpus, who discussed plans and gave him explicit instructions on what to do as a start.

Bumpus, who would provide the creative leadership for the Yosemite venture and monitor the quality of the work, was in active retirement at the age of 62. The descendant of an old New England family, he was already an ardent naturalist during his boyhood in suburban Boston and rural Maine. While an undergraduate at Brown University, he worked as an assistant in the university museum and made drawings to illustrate scientific papers. In 1886 he became the first professor of biology at Olivet College. After teaching there three years and developing a departmental museum, he enrolled at Clark University and received the first Ph.D. degree it granted. Brown called him to a professorship in 1890, a position he held until 1900. In 1895 the federal government asked him to take over the moribund Bureau of Fisheries laboratory at Woods Hole, Massachusetts, which he swiftly revitalized. His work in marine biology exhibited his capacity for well-conceived research along fresh lines and his marked ingenuity in the promotion and management of worthwhile projects.[8]

Bumpus spent 1900–10 at the American Museum of Natural History in New York. He went there with a dual appointment as curator of invertebrates and special assistant to the museum's president, Morris K. Jesup. Jesup, a wealthy railroad developer, turned much of the day-to-day management over to Bumpus along with the newly established office of museum director. Bumpus gave particular attention to the museum's exhibits, undertaking to transform the massive displays of study series, orderly but uninterpreted, to attractive presentations of ideas aimed to interest and educate the layman. "The exhibits in an institution of this nature should be made primarily for presenting in an ample manner various scientific subjects and not for the mere exhibition of specimens," he wrote. "The exhaustive collection of specimens belongs more to the workroom, where they should be available to visiting scientists. The so-called exhibition halls should be jealously preserved for imparting information and the specimens carefully selected." He also wrote: "There was a time when curators felt that an intelligible label was an administrative blunder. . . . The idea that a museum exists in order that certain collections may be exhibited has been found fallacious. It assumed that the specimen was of more value than the visitor; that the institution existed for things rather than for human beings."[9]

As a biologist and teacher good with his hands and experienced in scientific illustration, Bumpus was well equipped to tackle exhibit problems at both theoretical and practical levels. Colleagues gave him principal credit for the Northwest Coast Indian hall, an important breakthrough in display concepts. They also referred to him as originator of the curved background that added so much to the illusion of reality in habitat groups. He recruited preparators who would raise the artistic quality of exhibits and sent them on scientific expeditions to ensure the accuracy of their creations.



Hermon Carey Bumpus. A founding father of museum curatorship in the National Park Service. (Courtesy Brown University.)

He also set up an educational department in the museum and did much to develop its work with children.

Bumpus's success in reshaping the American Museum of Natural History along progressive lines had a disappointing end for him personally, but not before he had helped to organize the American Association of Museums in 1906 and served as its first president. Jesup's death in 1908 placed power at the museum in the hands of some trustees and curators who resented the changes Bumpus had fostered. They forced his resignation in 1910 and he left the museum field for a number of years. The University of Wisconsin called him to straighten out its business affairs, and he served as president of Tufts College from 1915 until his retirement in 1919. He was productively busy at his Duxbury home when Chauncey Hamlin enlisted his help for park museums.

When Ansel Hall reported to Duxbury in mid-July 1924, Bumpus gave him directions that must have come as a surprise. Instead of plunging into plans for the Yosemite Museum, Hall was to start a branch museum in the form of a lookout station at Glacier Point.[10] Whatever prompted this preliminary assignment, it gave quick, concrete evidence of progress, tested the abilities of the project field staff, and allowed time for a more deliberate approach to the main objective. At the same time, the lookout represented a singularly creative concept. The little stone structure that shortly took shape constituted a magnet drawing visitors to a precise spot where the evidence of the geologic history of Yosemite Valley spread out before them in an unmatched panorama. It provided one trial answer to a question typical of Bumpus's thought: "How shall the magnificent specimens in these roofless museums of nature be adequately labelled?"[11]

Hall's first step was to hire Herbert Maier, the architect who had drawn preliminary plans for Hall's proposed new museum two years before. The two men reached Yosemite in mid-August and had the lookout structure essentially completed by September 25. Bumpus traveled to California in September and spent two busy weeks on the job. Hall drove him to the park on the 11th, when park naturalist Carl Russell probably met him for the first time. Bumpus inspected the Glacier Point station, then used half the next day with Hall and Maier to sketch fresh plans for the new Yosemite Museum. Maier must have worked up the ideas with a swift, sure hand, for the architectural concepts were approved four days later.[12]

As soon as Bumpus left, Maier produced a preliminary set of scale drawings that went out for bid on October 4. Bids were opened on October 9 and a contract let on the 25th. Russell and landscape engineer Thomas C. Vint meanwhile staked the museum site. Maier and Hall completed the construction drawings and specifications by October 18, and the contractor started work promptly. Ansel Hall laid the cornerstone on November 16 in conjunction with the dedication of the new park headquarters complex.

Pouring concrete began on December 16, and the contractor finished construction by April 1, 1925. The museum opened to the public on May 29, 1926.[13]

By the beginning of the 1927 season, after the museum had served the first 150,000 of its visitors, Russell could describe it in full operation. Maier had designed an attractive but unobtrusive building. He made the ground floor a fire-resistant concrete box within an exterior of rough granite masonry. It housed the museum collections, most of the exhibits, and the library. Visitors moved logically from the lobby information center through a series of modest exhibit rooms. The first of these interpreted the park's geology with several relief models that illustrated progressive changes and directed people to where they might see the evidence. Displays of rock specimens, some available for handling, supplemented the models. The next two rooms addressed the park's natural history. In one of them habitat groups defined the five life zones visitors would encounter. A room on the life of the Yosemite Indians, embellished by the basket collection, came next. The last room, in which visitors tended to linger, presented a brief narrative history of the park. This led them to the exit onto a covered porch containing cut wildflower displays, a few cages of live lower vertebrates, and an old stagecoach. Adjacent were outdoor exhibits of Indian material including a large mortar stone in place. Visitors who wished could reenter the lobby and go upstairs to study additional exhibits of park trees and flowers.

The upper floor was of frame construction covered with shakes. Most of it contained work space. The park naturalist had his office there, as did the nature guides. There was a well-equipped exhibit preparation shop, a print shop for *Yosemite Nature Notes*, and a photographic darkroom. A caretaker had quarters on this floor. One room served as the laboratory classroom for the Yosemite Field School of Natural History and contained the extra flower exhibits. Another was a clubroom for the Yosemite Natural History Association and a meeting place for several organizations in the park.

The new Yosemite Museum was less an outgrowth of its predecessor in the old Jorgensen studio than the conscious prototype of proper headquarters museums for the national parks. It set policies and standards in size, scope, location, interpretive function, and exhibit quality. A park museum should be only large enough to tell the basic park story. As Bumpus put it, "To lead these people away from direct contact with nature, to beguile them into a building where they are surrounded by artifacts, and to subject them to the spell of the professional lecturer, is contrary to the spirit of this enterprise."[14] The museum's scope was determined by the knowledge visitors needed to enjoy the park; in other words, the museum should explain those salient features the park was established to preserve. It

followed that park museums should not start out with collections to be exhibited, but with ideas to interpret through exhibits. Bumpus noted that this inverted, but did not upset, normal museum objectives.[15] The headquarters museum should be placed where visitors would readily find it, close to the primary route of travel and near a natural concentration point. It required facilities to make it an effective base for the interpretive staff and a logical gathering place and starting point for interpretive activities.

The planning and preparation of exhibits are less well documented. Bumpus, who knew how and when to delegate authority, probably left much of the case design and installation to Maier and Russell, who had real aptitude for exhibit work. He did have some of the birds and small mammals for the new displays mounted at the Buffalo Museum of Science, where Joseph Santens was among the best taxidermists available anywhere. Egmont Rett, preparator at the Santa Barbara Museum of Natural History, did the five life zone groups and Chauncey Hamlin and his wife, who inspected the new museum and the Glacier Point station in May 1927, gave $100 to complete the last of these. Taxidermist Gus Nordquist of Oakland donated a coyote and skunk habitat group. Russell labored long and hard on the exhibit labels, which marked a particular improvement over the older Yosemite Museum.[16]

When Russell replaced Ansel Hall as Yosemite park naturalist in September 1923, he took over responsibility for museum work in the park. His preparation for curatorial duties involved more than what he had learned that summer as a ranger-naturalist under Hall. A native of Wisconsin, he had graduated from Ripon College in 1915 with a major in biology, then earned an M.A. in cytology at the University of Michigan in 1917. At Michigan he also worked on summer expeditions of the university's natural history museum under Alexander V. Ruthven, its director and one of the country's leading museologists, and helped move collections into the new museum building. After military service overseas as a lieutenant in 1918–19 the Army assigned him to special studies at the Sorbonne and to four months at the Museum of Natural History in Paris where he worked on European herpetology. Back home he found a job as a high school biology teacher in Reno, Nevada. In his spare time he studied the distribution of Nevada mammals and played an active part in the Nevada State Fish and Game Protective League. His ecological research involved correspondence with Joseph Grinnell at the Museum of Vertebrate Zoology in Berkeley and a trip to the Field Museum of Natural History in Chicago to study the records on Nevada specimens. He continued spare-time ecological studies while a Park Service naturalist and received a Ph.D. from the University of Michigan in 1931.[17]

Carl P. Russell. The Park Service's first staff museum expert.

During the winter of 1923–24 Russell did not neglect his curatorial functions. He set his wife to typing a card index of accessions. When a ranger brought him four skunks, he prepared one as a museum specimen and stretched and sold the other skins to pay for printing posters announcing the 1924 nature guide program. He obtained carbon disulfide and fumigated the museum collections. He went to the California Academy of Sciences and took instruction under Frank Tose, its chief taxidermist, to become familiar with the latest methods of natural history exhibit preparation. On the strength of this he prepared a small habitat group of chickarees for the museum in the old Jorgensen studio, and probably a second group of nesting white-headed woodpeckers.[18] The new Yosemite Museum, the Glacier Point station, and a second branch museum in the Sierra Club Lodge at Tuolumne Meadows remained under his care as park naturalist until 1929, when he was promoted to the new position of field naturalist with broader museum responsibilities.

Early in 1928 Bumpus visited Yosemite "to ascertain to what extent the construction of the Yosemite Museum and its substation at Glacier Point has fulfilled expectations; how it is being operated by the National Park Service; to observe the reaction of the . . . public to the efforts at popular education therein and thereabouts, and particularly to test the instructional value of the exhibited material, the plan of installation, the style and content of the labels . . . ."[19] What he saw evidently pleased him. His report to the Laura Spelman Rockefeller Memorial included comments on the history room, which he found of "high educational value." This room had entailed extra work on Russell's part because he had to develop the basic story as well as devise exhibits to interpret it. The necessity fueled an interest in history that carried over to his subsequent assignments.

Yavapai and Bear Mountain

With the Yosemite Museum nearing completion, the American Association of Museums obtained a second pair of grants from the Laura Spelman Rockefeller Memorial. One provided $2,500 for the continuing work of the Committee on Outdoor Education and the other $20,000 to build two new park museums on a smaller scale than the one at Yosemite. The committee proposed to extend its experiment in two directions. It would develop more fully the concept embodied in the Glacier Point lookout. It would also explore the role of museums in state parks. Herbert Maier, who became the AAM executive agent when Ansel Hall took up his duties as NPS chief naturalist in June 1925, transferred from Yosemite to the association's Washington headquarters in August 1926 to begin work on these new projects.[20] He promptly began architectural plans for an observation station-museum at Yavapai Point in Grand Canyon National Park and a trailside museum at Bear Mountain in the Palisades Interstate Park.

Bear Mountain offered a large number of potential museum visitors different in many respects from the people traveling to the western national parks. Excursion steamers brought thousands of New Yorkers up the Hudson River for outings there. The crowds included many children and young people who lived and worked in the city. Most were out of touch with a natural environment and nearly all were in holiday mood.

Two committee members had special interest in the Bear Mountain proposal. William Welch was general manager of Palisades Interstate Park and Frank Lutz, curator of insects at the American Museum of Natural History, had set up a field station within the park not far from Bear Mountain. In 1925 Lutz developed a footpath there along which he labeled things of interest. He called it a nature trail, and it proved popular with visitors. Another development in the park also helped to set the stage. The five New York City boroughs had their Boy Scout camps around a park

Herbert Maier. Park museum architect, in Yosemite with Betty (Mrs. Carl P.) Russell.

lake. There about 1923 Benjamin T. B. Hyde established a camp museum—an informal, imaginative affair of temporary displays involving the young campers in nature study projects. Under the leadership of "Uncle Bennie" the idea spread to most of the group camps in the park and alerted park management to the possibilities of a museum for day visitors.[21]

From these ingredients Bumpus and his committee colleagues made plans for a nature trail and a small museum. The resulting trail opened invitingly to visitors as they started up the hill from the boat docks. Eventually it led into and through the simple stone-walled building Maier designed—the prototype of trailside museums. The exhibits inside continued the theme of the trail. In their informality and spontaneity the displays resembled those of the camp museums, but they also reflected the richer resources on which they drew. When the AAM had erected the building, the park asked the American Museum of Natural History to operate the integrated museum and trail. The Bear Mountain Experiment therefore continued as a project of the American Museum's Department of Education, headed by the man Bumpus had selected as its first curator almost twenty years before. He in turn assigned continued development and operation of the trailside museum to William H. Carr.[22]

While ideas were jelling on the Hudson, the committee's project at Grand Canyon took shape. The complex story exposed in the canyon walls challenged the committee to devise museum methods that would interpret

it. Bumpus deferred to another member of the committee in this case, for he was not a geologist and needed to give his attention to the Bear Mountain project. He also had a concurrent and demanding assignment peripheral to the committee's work: Chauncey Hamlin persuaded him in 1925 to serve as consulting director for the new Buffalo Museum of Science. So John Campbell Merriam, a paleontologist accustomed to coping with geological concepts and as concerned as Bumpus with the effective interpretation of science to the public, put his mind to the Grand Canyon problem.

An Iowan by birth, Merriam joined the faculty of the University of California in 1894. He taught at Berkeley until 1920, holding the professorship of paleontology from 1912 and ending his academic career as dean of faculties. In 1919 he was chairman of the National Research Council. The remainder of his life he served the Carnegie Institution of Washington, as president 1920–37 and then as president emeritus, supporting and guiding major research programs in many fields.

At Grand Canyon Merriam produced what Ronald F. Lee a generation later held up as a classic example of interpretive planning, a standard against which to measure future Park Service efforts.[23] He started by defining the park's educational objectives. "The educational program of the park must arrange itself around the elements of principal interest," he felt; "it will involve a study of the means for giving the best opportunity to see and to understand these most significant features." His plan next identified the aspects of Grand Canyon that met this criterion, including the depth and magnitude of the canyon, the power of the river, the nature of the plateau into which it had cut, and the gap in time at the top of the Archaean inner gorge. It then became necessary to find a spot where visitors could see and at least begin to understand these prime aspects.

Yavapai Point won general agreement as the best location. There Maier designed an observation station very carefully sited on the canyon rim. Its proposed functions called for a larger structure than at Glacier Point. Its parapet was to hold 15 binoculars or telescopes, each fixed to give the viewer a closer look at a key feature. Explanatory labels and specimens along the parapet would integrate and interpret the concepts of time and change illustrated by the selected details of the landscape. As Merriam later expressed it, "All that we are concerned with is in turning your attention to the real things outside . . . ."[24]

Back from the parapet but still with a sweeping view of the canyon, an open space allowed visitors to sit while listening to a fuller interpretation of the scene. This setting dovetailed with Merriam's thinking on the sensitive role of the interpretive staff. "It is difficult for one not saturated with knowledge and with interest in the miracle of the place to present a statement measuring up to the opportunity evident in the face of nature,"

John C. Merriam. While president of the Carnegie Institution of Washington he put his mind to proper interpretation of the national parks. (Courtesy Carnegie Institution of Washington.)

he wrote. But saturation with knowledge would not be enough: "It will always be difficult to satisfy any intelligent person with a purely scientific statement regarding a picture which clearly requires philosophical interpretation, and which at the same time demands the highest type of spiritual appreciation."[25] In fact, a succession of park naturalists found this a place where they could most nearly achieve such standards in their interpretive talks. A fairly spacious exhibit alcove behind it rounded out the Yavapai station.

Merriam did more than conceptualize the Yavapai Museum. He gave close attention to every detail. To ensure that the specimens used precisely and effectively illustrated the ideas intended, he helped collect them. He also enlisted the aid of other scientists who had conducted important research in the canyon in collecting specimens and in checking each statement of fact or scientific theory to be presented to visitors at Yavapai. When funds from the Rockefeller grant ran out, he personally paid for one of the large windows and persuaded the Carnegie Corporation of New York to grant $3,000 to finish the project. He organized a Grand Canyon Committee of the National Academy of Sciences to facilitate the work in various ways.[26]

Merriam's active involvement at Grand Canyon continued at least until mid-1935. By then he had applied the lessons of Yavapai to another observation station, the Sinnott Memorial at Crater Lake National Park. This new museum, funded by a congressional appropriation in 1930, indicated that the demonstration projects of the AAM Committee on Outdoor Education were beginning to achieve one of their principal objectives: persuading Congress to build and support museums in the national parks.

Merriam's influence at Yavapai had another dimension. He made good use of the park naturalist, Edwin McKee, in carrying out the work on site. In doing so he undoubtedly motivated McKee to become an outstanding geologist and one of the most profound students of the canyon. McKee in

turn set a pattern for his successor of responsible scientific collecting to study and document the park's resources. By the mid-1950s Grand Canyon had built up a collection so significant that it constituted the decisive justification for the government to erect a larger museum designed to assure its protection and facilitate its use. Merriam's reliance on McKee to complete and install exhibits at Yavapai carried with it the assumption that exhibits in the parks should meet truly high standards. Characteristic was McKee's request that Erwin J. Raisz of Columbia University redo charts attempted by less skilled hands.[27]

The Yellowstone Museums

With the Yavapai Museum as well as Bear Mountain underway, the AAM Committee on Outdoor Education once again turned to the Laura Spelman Rockefeller Memorial. Having created model park museums of three different kinds, the committee was ready to develop its concepts further. In the 1926 proposal it had asked for $400,000 to include museums for Yellowstone and other national parks. Although the foundation allowed only a fraction of this request, in 1928 it made a third pair of grants. The committee received $6,000 for its operations and $112,000 for projected work in Yellowstone.

Yellowstone's size and diversity presented a new set of conditions. The park has a rich variety of prime features calling for interpretation. Visitors can adequately experience only a fraction of them at any one place. People therefore tend to congregate at several points of interest, miles apart and each distinct in character. The situation required more decentralization than the developments at Yosemite had provided.

This did not become evident to Bumpus until he studied the problem on the ground. In April 1928 he was still giving precedence to a headquarters museum. "I am hoping," he wrote Russell, "that Messrs. Albright, Vint, Maier and myself will promptly agree upon a location and the character of the building at Mammoth, which will be our first piece of constructive work." After he and Maier reached Yellowstone in May, they decided instead to start on a branch museum at the park's best known focal point—Old Faithful geyser. It took Maier only about four months to design and construct a trailside museum building there. When Russell arrived in October to start planning exhibits for it, he "found the new museum to be a wonder."[28]

Meanwhile, Bumpus continued to evolve his interpretive concepts for Yellowstone. He selected two more key locations for small museum development along the Yellowstone loop road. One at Madison Junction overlooked the 1870 campsite of the Washburn-Doane-Langford Expedition where the "national park idea" traditionally had its birth. An inspiring spot

at which to tell about Yellowstone history, it provided a logical first stop for visitors coming in the park's west entrance. The Norris Geyser Basin, differing significantly in aspect and action from the Old Faithful area, provided the third museum site. Sensing a need to point out and explain features that did not require such extensive interpretation, Bumpus also conceived of isolated exhibits placed beside the road. Each would need a minimal shelter and space for motorists to pull out of traffic for a brief stop. Perhaps thinking of the wayside crucifixes found in some European countries, he called these single exhibit shelters "shrines." He expressed the problem as a need to "label Yellowstone" for the enlightenment of visitors. These novel proposals required selling, not least to the park naturalists on whom he depended to put them into effect.[29]

Before turning to the execution of Bumpus's plans it is worth following the progression of his ideas a little further. Like Merriam at Grand Canyon he faced the fact that the park, created to preserve certain salient features, held innumerable other things of potential interest to visitors. His focal point museums located at the sites of prime significance would provide "the exclamation and interrogation points of an informational recital." But, he asked rhetorically, "Should a museum at Old Faithful for example confine itself strictly to geyser activities, or should it broaden its function and embrace a wider range of subjects appropriate to the general locality?" His conclusion: "The wider the local range, the better."[30] This judgment legitimized exhibits on Yellowstone birds and other non-geothermal aspects of the park at Old Faithful. It recognized, no doubt, that similar dilutions of emphasis existed in the history room of the Yosemite Museum and were being included in the exhibits at Yavapai. It expressed a teacher's concern for making good use of an educational opportunity.

Perhaps Bumpus realized that such inclusions had a less desirable side effect. They made it easier to let considerations of popular interest outweigh those of significance in determining the content of park museums, a continual temptation that park interpretive programs encounter. Against this danger he concurred in the strong recommendations of the Committee on Study of Educational Problems in National Parks: "The distinctive and essential characters of National Parks lie in the inspirational influence and educational value of the exceptional natural features which constitute the reason for existence of these parks. . . . The educational program in National Parks should relate itself primarily to the essential features. . . . Educational work should be reduced to the lowest limit that will give the visitor opportunity to discover the things of major interest, and to inform himself fully concerning them if he so desires."[31] Official museum policy has adhered to the primacy of significance, but instances of divergent practice have created curatorial problems and compromised interpretive standards.

When Bumpus referred to a museum as part of an informational recital, he had clearly in mind another aspect fundamental to a proper park museum. It does not stand alone as an independent entity but forms part of an integrated interpretive program. Bumpus at Yellowstone was as concerned as Merriam at Grand Canyon with the whole spectrum of media, activities, and services that could be coordinated into the most effective interpretation of the park features possible. He worked with and through the park interpreters as vital elements in the demonstration project.

To carry out museum developments at Yellowstone Bumpus relied principally on the team of Maier and Russell he had broken in at Yosemite. Maier, as AAM executive agent and architect, came to the job with broadened and deepened experience. He had the Yavapai and Bear Mountain projects behind him and was acquiring a firsthand comprehension of exhibit design, preparation, and installation. Bumpus, in his role as consulting director of the new Buffalo Museum of Science, engaged Maier during the winter months to build a series of splendid miniature models showing reconstructions of outstanding archeological sites peopled with tiny figures for Buffalo's Hall of Civilization. In this assignment he learned standards as well as methods. Under the guidance of Bumpus he worked with recognized specialists including a leading anthropologist, the head of a university art department, and a successful sculptor.[32]

Russell also received further training to hone his museological skills for the work at Yellowstone. As Bumpus wished, the Park Service detailed him to the Yellowstone project when the 1928 summer season at Yosemite ended. He spent most of October planning exhibits for the Old Faithful Museum. His diary for the month shows him reading industriously to get a grasp of the subject matter, groping for exhibit ideas, consulting long hours with Maier and Superintendent Albright, drafting case layouts with Yellowstone's new park naturalist, Dorr Yeager, and dipping into other curatorial activities at the park. Maier was winding up his work on the new museum building before returning to his exhibit preparation assignment for the Buffalo Museum of Science. Yeager, a former ranger-naturalist on Russell's staff at Yosemite, was fresh from his first summer with Yellowstone's problem-plagued interpretive program. Having allowed so much of a start on the Old Faithful exhibit plan, Bumpus shifted the emphasis to Russell's education.

For this purpose he used a technique that had worked well before. He summoned his trainee to Boston, where over 13 days he took or sent him to more than a dozen museums in the area. Together they analyzed the good and bad points of numerous exhibits. The study of current exhibit practice, which continued throughout his training trip, gave Russell a solid basis for quality standards as well as many practical ideas on exhibit design and technique. Bumpus also saw to it that he met people who were creative

leaders in the museum profession or scholars who might help assure accuracy and depth in his exhibit plans.[33]

Then followed twenty days in New York, where the American Museum of Natural History absorbed most of Russell's time. He found it "such a mine as I had not visualized" while gathering "a wealth of ideas and plenty of notes." He studied the exhibits systematically floor by floor, sometimes in company with Bumpus. The museum also let him check through the duplicates in the library and select many useful publications for the park libraries at Yosemite and Yellowstone. He also visited ten other New York museums where he observed additional examples of museum practice and made valuable contacts. At the Museum of the American Indian he became acquainted with one of the curators, Louis Schellbach, who later played a significant role in national park museums. Other New York contacts included at least three members of the new Committee on Study of Educational Problems in National Parks and staff of the Laura Spelman Rockefeller Memorial.[34]

Early in December Bumpus sent Russell on to Philadelphia, Washington, and Pittsburgh. A day in Philadelphia gave him time to go through three museums and meet Charles Toothaker, the progressive director of the Commercial Museum. His six days in Washington included study visits to the National Museum and three others. In Pittsburgh the Carnegie Museum of Natural History provided not only fine exhibits to study but also the opportunity to meet and talk with the museum's outstanding director, Andrey Avinoff.[35]

There followed a six-day assignment in Buffalo at the as-yet-unopened Museum of Science. What he found there made a strong impression. He did some practical work with the exhibit planners that broadened his experience in case layout and label composition but shied away from participation in actual installations. Chauncey Hamlin urged him to remain for a month to help with the exhibits, but his other commitments made this impossible. He did get to know another museologist of high caliber, Assistant Director Carlos Cummings, who would later train other curators for national park museums. Bumpus, Maier, and Russell conferred there on Yellowstone exhibit plans. "At Dr. Bumpus's behest we made many, and radical changes," Russell recorded.[36]

From Buffalo he proceeded on the last lap of the study tour. A stopover at Cleveland allowed him to see three museums before going on Christmas leave. After that he spent a Sunday visiting the Milwaukee Public Museum before meeting Dorr Yeager in Chicago. Together they devoted a few days to analyzing exhibits and conferring with staff at the Field Museum of Natural History. They also discussed the revised Yellowstone plans, which the park naturalist found hard to accept. By mid-January Russell was back at his post in Yosemite faced with his own duties as park naturalist again,

but not for long. His exposure to at least 38 museums of various kinds and to many of the best minds in the profession had other ends in view.

Behind Russell's carefully plotted itinerary lay Bumpus's concern about a problem he saw coming. If the experiments of the AAM committee achieved their objective, they would persuade Congress to follow the example of the Laura Spelman Rockefeller Memorial. Congress would appropriate funds to build additional museums where needed throughout the national parks and monuments. This in turn would require the Park Service to undertake extensive museum planning, development, and operation. Bumpus raised a key question: "Will it be possible so to encourage members of the permanent educational staff that they, without special training, will collect, prepare, label, and exhibit museum material in such a way as creditably to meet the special requirements of the sightseer?" He had seen enough reluctance and amateurism to create doubts. So he went on to suggest a solution: "Much will be accomplished if within the service a competent technical staff can be organized."[37] With these words he planted the seed of what would eventually become a centralized professional museum staff to serve the park system as a whole.

Evidently in response to his prodding, the Service promoted Russell as of July 1929 to a new position of field naturalist specializing in museum work. His duties primarily involved exhibit planning and preparation for the parks, and he used the subtitle of museum advisor.[38] The position fell logically into Ansel Hall's Field Division of Education at Berkeley, but initially the ties were loose. Russell received his assignments largely from Bumpus, his travel orders from the director's office in Washington, and his pay from the Service's field headquarters in San Francisco. Hall asked for and received monthly reports of his work.

The summer of 1929 at Yellowstone found Herb Maier completing construction of the Madison Junction museum building and getting a good start on the one at Norris Geyser Basin. The Old Faithful Museum, built during the 1928 season, was open when Russell joined Bumpus there in July. It still lacked quite a few of the planned exhibits. More significantly, some of those already installed failed to satisfy Bumpus. Russell's first assignment therefore involved exhibit preparation to upgrade and complete this museum. He personally engaged in various practical tasks from collecting and processing specimens to lettering labels. A distasteful chore was to cast copies of the 56-square-foot Yellowstone relief model so Old Faithful and the other branch museums would each have one. By the end of July the museum was "functioning splendidly" and the director could report it [SM]successful beyond all expectations."[39]

During the remainder of the summer Russell struggled with exhibit plans for the two new museums. He found them difficult. His background prompted him to focus on some ecological exhibits at Norris, treating a

secondary aspect of that site's story; at that time he appeared not to recognize Norris as primarily a geological site museum.[40]

That December Bumpus called him east for the second time. Completing the Norris exhibit plan, his principal task on this trip, demanded that he become well grounded in geology. Bumpus had two ends in view. First, of course, the museum needed to tell its story with clarity and accuracy. He also hoped to counteract tensions that had developed within the Committee on Educational Problems in National Parks, particularly between Merriam and himself. The trouble thus involved the AAM committee as well. As Russell expressed it, "I am to secure a practical knowledge of petrology, mineralogy, and historical geology that will put me in a position to talk to Merriam, Day, Matthes, and the rest of the geologists who disapprove of a biologist attempting to plan park museum exhibits."[41] For almost two months he studied under selected tutors in the geology departments at Brown University and Harvard. He also worked on exhibit plans, drafted label copy, and dickered for specimens that would be needed at Yellowstone. In Washington during March he consulted with geologists at the Carnegie Geophysical Laboratory, the Geological Survey, and the National Museum and completed an acceptable exhibit scheme. Back at the Buffalo Museum Bumpus reviewed the Norris plans favorably and Maier supplied detailed dimensions of the exhibit space.[42]

The park's well-nurtured museum program operated in high gear during the 1930 season. Russell had help in carrying out the exhibit plans from the taxidermist, the map letterer, a new general assistant, and especially Dr. and Mrs. Erwin J. Raisz. The latter couple formed an exceptional team combining sound geological understanding with high artistic skills. The park naturalist staff also lent a hand. As a result the Norris Museum opened on July 5, although still lacking a few exhibits, and the Madison Junction Museum on July 11. Reactions to the Norris installation were gratifying. Ordinary park visitors evidently liked it. So did more critical viewers including John D. Rockefeller, Jr., Director Albright, and visiting geologists from the Geophysical Laboratory and Princeton University. In contrast, the Madison Junction Museum proved unsatisfactory. Its scope was too narrow. Bumpus was on hand and work started at once to add more exhibits carrying Yellowstone history up through the Hayden Expedition of 1871.[43]

Exhibit work did not stop there. Apparently the dream of a new central museum at Mammoth Hot Springs was dead, but Bumpus was ready to see the existing headquarters museum in the old Army building revitalized. He personally worked on revising the exhibits in the front room. Russell and his crew made substantial progress on a second room that received new wiring, factory-built cases, and a set of exhibits about Yellowstone Indians and history as well as more geology. Development of this room led him to

obtain by transfer the Nez Perce artifacts in the Yosemite collection, where they had no pertinence. Later such cooperation between parks would constitute an element of strength in an integrated chain of museums. The Mammoth project also stimulated Russell's enthusiasm for fur trade history; here was an opportunity to include the subject in needed exhibits.[44]

Work proceeded meanwhile on two other aspects of the museum program. Herb Maier started construction of a fourth branch museum located at Fishing Bridge on the shore of Yellowstone Lake. He also had the first of the trailside shrine structures, at Obsidian Cliff, ready to receive its cases. Russell got a good start on the Fishing Bridge exhibit plan. More surprisingly, he managed to find time for curatorial activities beyond the immediate demands of the exhibits, something that normally received low priority. Both the Park Service and the AAM committee thought of park museum collections as educational tools justified by their interpretive function. It would be many years before collection care and management received significant emphasis. Russell's work that summer nevertheless demonstrated a firm grasp of acquisition methods and a lively, knowledgeable concern for study collections.[45]

Museum development in Yellowstone proceeded at an undiminished rate during the 1931 season in spite of the worsening Great Depression. Bumpus supervised the work personally for almost a month, with the exhibit staff operating out of a tent camp set up near the Fishing Bridge Museum. Russell concentrated on the bird room for Fishing Bridge, while Erwin Raisz worked on the geology room. Opened in early August, the two rooms exemplified quite different approaches.[46]

A wealth of mounted birds provided the core of the bird room. In step with the best current practice Russell arranged the specimens interpretively, many of them in semi-habitat settings to bring out ecological relationships. He supplemented these displays with "related story" units on other aspects of bird biology. For the geology room Dr. and Mrs. Raisz produced a sequence of graphic panels containing diagrammatic illustrations and text. The panels told a story with outstanding clarity and interest. The relatively few specimens in the room played a secondary role because the real objects pertinent to the narrative were geologic features visitors would see out in the park. In this regard the room embodied the essence of park museum philosophy: to interpret the significant aspects and to consider the park itself as the museum.

On the other hand, such predominance of graphics over specimens could go too far and often did during the ensuing decade. This resulted especially because many of the new museums addressed historical subject matter and cultural objects had not established legitimacy as conveyors of historical data. No one quite knew how to use them in interpretive exhibits. Getting historians to appreciate objects became a continuing concern to

Russell.[47] Meanwhile the verbal, "flatwork" exhibits in Park Service museums earned the kindly censure of the leading American museum critic.[48]

The Fishing Bridge Museum still lacked the exhibits for one main room when the 1931 season ended. Nevertheless, the AAM Yellowstone project was nearing successful completion. Already there were signs that it had hit its target. Congress had appropriated funds for a small museum in Rocky Mountain National Park as well as for the Sinnott Memorial at Crater Lake. Rocky Mountain superintendent Edmund B. Rogers and his park naturalist Dorr Yeager, who had transferred from Yellowstone, persuaded the Denver Museum of Natural History to provide specimens and the well-known taxidermy firm of Jonas Brothers to make them up into small habitat groups as a donation.[49]

The American Association of Museums invited Russell to speak on park museums and the Yellowstone project at a general session of its 1933 annual meeting in Chicago. During the meeting the Committee on Outdoor Education also convened. Bumpus submitted his resignation, whereupon Chauncey Hamlin reorganized the committee keeping Bumpus as a member but replacing most of the others with younger men. His action kept the committee alive, but its role on behalf of the Park Service was substantially at an end.

Russell went to Yellowstone after the meeting and conducted Laurence Vail Coleman, the AAM director, on an inspection of the committee's five years of accomplishment under its final Laura Spelman Rockefeller Memorial grant. While appreciating and making good use of the museums and wayside exhibits produced, the park greeted with relief the termination of what must often have seemed outside interference. Superintendent Roger W. Toll avoided meeting Coleman during his several days in the park, and Russell reported that "the feeling against Bumpus and A.A.M. is general here."[50] Despite this sour note, fruitful collaboration between the organizations continued.

Park Museums and the Field Division of Education

In the decade 1925–35 two ideas on the management of the Park Service museum program underlay its continuing growth. Chief Naturalist Ansel Hall conceived of himself as the leader in park museum work and the educational division, as his operation was called, as its natural center. Hermon Bumpus, on the other hand, concluded that the museum program needed to be centered at the Service's Washington headquarters where authority for policy-making and budgeting rested. It was Carl Russell's sometimes uncomfortable situation to work with a foot in both camps.

It will be recalled that Hall received his appointment as chief naturalist of the National Park Service in 1923 but postponed entering on duty to accompany Chauncey Hamlin's son in his *Wanderjahr*. Work on the new Yosemite Museum further delayed his assumption of the position. While Hall was on the AAM payroll as executive agent for the Yosemite Museum project, he looked ahead to his role as chief naturalist. Director Mather had given him permission to set up headquarters in Berkeley, and he purchased land near the University of California campus and began constructing the quarters he expected to need. Besides a house to live in he proceeded with a facility for museum exhibit production. It would provide 2,316 square feet of space for an office big enough to house a technical museum library, a studio/shop for the messier stages of exhibit preparation, metalworking and carpenter shops for building cases and other display fabrication, a larger studio in which to do the final artwork and assembly, a photographic darkroom, and a combined garage/storeroom.[51] All but the studio were partially completed during the winter of 1924–25. When the AAM abruptly terminated his assignment as executive agent, he assumed the duties of chief naturalist in June 1925. The new building in Berkeley became his headquarters, for which the Park Service paid him rent.[52]

The next year Hall built two geyser models for Yellowstone that spewed water about once a minute to a height of thirty inches. His hands-on involvement in exhibit preparation, which he probably enjoyed, continued to some extent but not as his primary activity. His educational division had important tasks in interpretive planning, coordination, and training. His intent regarding park museum work at this stage shows in his proposed organization. As an assistant he wanted "an expert museum technologist who has had long experience in the preparing of all types of exhibits for display, in the preservation of material, and in the construction of models, groups, and museum equipment."[53] This versatile and highly skilled preparator would spend the winters at headquarters supervising and training park naturalists brought in during the off-season as they helped him build exhibits for their parks. In summer he would go out to install these exhibits and continue training the naturalists in museum preparation.

Such a program would have reinforced the natural inclination of many park interpreters to act as their own exhibit specialists. It thus would have encouraged the existing amateurism, although upgrading the results in the case of apt pupils. Hall did not obtain anyone to help with the museum work until 1929, however, when Carl Russell became field naturalist–museum advisor. Russell brought a somewhat different orientation bolstered by his continuing experience under Hermon Bumpus. His influence would lead toward making park interpreters discriminating clients rather than practitioners in the technology of museum exhibition. Some tension between the two approaches would linger, and occasionally flare up, long after

centralized exhibit design and production became established Service policy.

Delay in staffing was not the only snag Hall's new division encountered. Fiscal watchdogs did not take long to spot the conflict of interest in Hall's position as both landlord and tenant. The Service was forced to terminate the arrangement, and only strong support from the directorate saved Hall from having to refund the rent received for the building he had provided.[54] It took time to find another suitable place for his office and workshops, during which he worked out of the Service's existing field offices in San Francisco. Early in 1929 the educational division moved to rooms offered rent-free by the University of California in Hilgard Hall, centrally located on the Berkeley campus. This academic building remained its base until World War II. At first the available space did not allow for much, if any, shop work, but by 1931 the division had nine rooms. In 1933 growing needs, and apparently objections to the noise and dirt accompanying exhibit production, led to moving the Park Service activities to a more isolated location, the entire top floor of one wing.[55]

Director Albright approved a "General Plan of Administration for the Educational Division of the National Park Service" on June 4, 1929.[56] Under this plan, undoubtedly drafted by Hall, the educational division comprised not only the headquarters in Berkeley but all the interpreters in the parks. The plan delegated to the chief naturalist considerable control over the selection of park interpretive personnel and over each park's "Plan of Administration of Educational Activities." The latter detailed the organization and operation of a park's current interpretive program. Any changes in it were to go through the chief naturalist to the director for approval. The educational headquarters would develop or approve all plans for museum buildings, equipment, collections, and exhibits. Park naturalists might carry out these plans with the advice and assistance of the chief naturalist or other technical advisors. The general plan spelled out the objectives and scope of park museums, briefly stated accession policies, and outlined the park interpreter's role in administering a museum.

Approval of this comprehensive document set the stage for the First Park Naturalists' Training Conference, organized by Chief Naturalist Hall. It was held at the Berkeley headquarters and lasted four weeks in November and December 1929, ending with a field trip to Yosemite. The trainees comprised all six of the full-time park naturalists and one superintendent's assistant, seven able and experienced interpreters from big, busy parks with museums in operation or prospect. Four days dealt with museum matters. Carl Russell began each of the museum sessions with a theme-setting paper. The trainees followed with papers on assigned topics interspersed with lively debates on the ideas expressed. Russell read aloud the brief chapter on the purpose of museums from Laurence Vail Coleman's *Manual for*

Small Museums, and most of the conference papers and recommendations drew to some extent from the same well-chosen source.[57]

The conference proceedings demonstrate more specifically the concepts then characteristic of park museum work. The participants agreed, as a matter of course by then, that a national park is itself a museum, its features the prime specimens to be preserved and interpreted. This made the park museum an integral part of a larger enterprise, a cog in the wheel of the total preservation-interpretation effort. The potential disparity between a museum's fundamental objectivity and the parks' developing mission to promote an environmental ethic, creating a subtle line between the use of exhibits to interpret and persuade, did not surface. The conferees saw that a park museum differs from other museums principally in its limited scope, being concerned only with what makes the park significant.

From their point of view parks needed two kinds of museums. One, the headquarters museum, introduced visitors to the park as a whole while providing a base of operations for the interpretive staff. The other kind was a smaller satellite located at a strategic point for interpreting a key aspect in greater detail. They called this type a trailside, branch, or focal point museum and usually included observation stations in the definition. Such a scheme of central and branch museums fitted the perceived needs of the big parks represented at the conference but would not prove viable Service-wide. The discussions affirmed that exhibits must both communicate understanding of park features and motivate visitors to experience them firsthand, that the exhibits should tell a sequential story, and that exhibit installation should aim toward high standards in design and construction.

It was further agreed that park museums should have study collections for reference and research. An admonition to the naturalists to program time for work on the study collections implies that it was already hard to fit curatorial duties into busy schedules. Hall advocated collecting archeological, ethnological, and historical artifacts ahead of natural history specimens, a practice inconsistent with the primary significance of natural parks and more often involving donations with conditions attached. The conference affirmed that park museums require complete, systematic, permanent records, although in discussing these the trainees failed to grasp adequately Coleman's careful analysis.

It seemed clear that in administering a park museum the permanent park interpreter would act as director, assigning curatorial duties to members of his staff. As de facto museum directors and curators the trainees noted their responsibilities under the American Association of Museums' published code of ethics. They also endorsed the idea that park museums should cooperate as fully as possible with other museums both within and outside the parks, a point stressed in Coleman's book. Finally, the conferees considered how the parks and Field Educational Headquarters should

collaborate in museum development but did not define the nascent relationships clearly.

Russell's appointment as field naturalist–museum advisor four months before the conference constituted an important potential factor in this collaboration that remained to be tested. Hermon Bumpus and Yellowstone left him little time at first to advise and assist other parks. After the training conference his next chance came in August 1930. He slipped away from Yellowstone for a Sunday visit to Grand Teton National Park. There he found in the seasonally employed park naturalist, Fritiof M. Fryxell, a kindred spirit and promising resource. Fryxell, geology professor and museum curator at Augustana College, had a lively and informed interest in developing a park museum. His dedication to science and teaching combined with curatorial interests extending to historical matters would benefit the Park Service museum program in the future.[58]

Russell's second advisory involvement in the field came in November 1930. He went from Yellowstone to Rocky Mountain National Park to review briefly the superintendent's plans for a small museum to be built with appropriated funds. When the museum was nearly completed the following August, he returned to Rocky Mountain for a week to inspect the work, offer suggestions, and prepare a report. A few months later, en route from Yellowstone to Berkeley, he stopped three days at Mount Rainier to consult on the park's proposed museum plans. He found them promising and noted that he could usefully discuss the suggested building layouts with the Service architects stationed in San Francisco.[59] Back in Berkeley he occupied for the first time an office of his own in Hilgard Hall, becoming a visible part of the field headquarters organization.

The field trip Russell made to the Southwestern National Monuments in March 1932 explored more fully the service a museum advisor could render. At Casa Grande he dealt with an established museum grounded in Frank Pinkley's distinctive philosophy. It was about to move into a new building with more space, and he evidently succeeded in persuading Pinkley to accept some provisions for self-guidance. He was soon busy lettering labels and making charts to supplement the exhibited artifacts. A brief visit to Tumacacori with Pinkley and Robert Rose, the new park naturalist for the Southwestern Monuments, introduced him to a site rich in potential for museum development. He and Rose then went to Petrified Forest to prepare from scratch a small museum for the new headquarters. With local help they accomplished as much as time permitted, leaving some exhibits for Russell to work on in Berkeley during the winter. In the spring of 1933 he did some additional exhibit work at Casa Grande and Petrified Forest and traveled with Rose to become better acquainted with museum needs in several more of the monuments.[60]

Homemade exhibit at Aztec Ruins National Monument, 1933. Photographed by Carl Russell.

Russell made a short advisory visit to Glacier National Park during the 1932 Yellowstone season and another in 1933. These did not achieve much. The park's rather grandiose museum proposals failed to materialize, and the park naturalist aimed to keep the reins with a minimum of input from educational headquarters.[61] In a sense the field naturalist–museum advisor approach to museum development reached the apex of its effectiveness in Russell's 1932 and 1933 assignments to the Southwestern Monuments. By the time he was free to devote his full attention to this approach, external events would force a change.

Meanwhile, Hall resumed active participation in exhibit planning and production. In 1930 John Merriam called on him to carry out some of the assembling of materials and installation of exhibits for the Yavapai Museum at Grand Canyon. This collaboration produced good results, and Hall continued to assist Merriam with exhibits for the Sinnott Memorial observation station at Crater Lake in 1931. That year seems to have clarified his mandate as senior park naturalist to supervise "museum construction and installation of exhibits."[62]

In 1932 the Park Service decided to take an active part in the Century of Progress Exposition, scheduled to open the next year at Chicago. Hall got the assignment to build most of the park exhibits for the fair. He used the limited facilities in Hilgard Hall, with Russell and most of the park naturalists as preparation staff, to produce a series of miniature models

illustrating features of several parks and monuments. This rather makeshift crew planned and constructed the displays in about three months and shipped them off to Chicago by mid-April 1933.[63]

While they labored on this project, Congress enacted President Franklin D. Roosevelt's first emergency relief program. Called Emergency Conservation Work, it provided for quick mobilization of unemployed young men as a Civilian Conservation Corps. The first six-month enrollment period began April 1. Within a few weeks the Park Service had responsibility for some 30,000 men in 175 camps. Because planning and supervising their work projects required far more manpower than it possessed, the President agreed to hiring temporary employees for this purpose outside normal civil service procedures. Soon the Service had about 2,300 ECW technicians, some of whom later became key members of its permanent organization.[64]

Assistant Director Conrad L. Wirth, placed in charge of the CCC program for state parks, divided his huge administrative task into districts, a decision that foreshadowed the regionalization of the Park Service. He promptly selected Herbert Maier to manage the large Rocky Mountain District. Maier remained an able Service administrator for the rest of his career, but the museum program lost direct access to his outstanding talents as a museum architect and preparator.

Wirth located one of the new CCC camps for the second enrollment period in Strawberry Canyon, just above the Berkeley campus. This placed a reservoir of unspecialized manpower at the doorstep of the Field Educational Division. The camp remained for only six months, but Hall obtained several enrollees for exhibit construction, and the demonstration of useful work opportunities led the ECW administrators to station a 35-man detachment at the abandoned camp facility. By the time the new enrollees were available, the Branch of Research and Education in Washington had in operation a topographic model shop at Fort Hunt, Virginia. CCC boys from the Fort Hunt camp manned the project under ECW technicians. The Berkeley detachment followed the Fort Hunt example, specializing in relief maps that involved labor-intensive methods and were still very popular as interpretive devices. Some of the Berkeley enrollees worked on other kinds of exhibits and a few became accomplished preparators. The employment of CCC labor in Hall's division justified having ECW technicians there as well, and in due course seven positions were allotted him.[65]

By the fall of 1933 the Service knew it would receive Public Works Administration funds to build a number of structures housing museums, although the details were not yet clear. Secretary of the Interior Harold L. Ickes, who served also as PWA administrator, approved projects to construct combined headquarters/museum buildings for six of the new

historical parks in the East and for five smaller park areas west of the Mississippi.[66] PWA also funded conversion of the Moraine Park Lodge in Rocky Mountain National Park to museum use, an addition to the Mesa Verde museum, and the reconstruction of historic buildings in Yorktown providing museum space for Colonial National Monument. In addition, Ickes included a departmental museum in the plans for a new PWA-funded Interior Department building in Washington. PWA thus supplied the principal focus and support for the Service's museum program during the next few years. Most of the western projects became urgent problems for Hall's staff at Berkeley.

The Civil Works Administration allotted nearly $2.5 million to the Park Service for expenditure between November 1933 and April 1934. Hall's office received enough of the money to employ 56 selected workers whose skills could be adapted to exhibit preparation or support services. By August 1934 the State Emergency Relief Administration began to supply workers, most lacking special training for the tasks involved. Their numbers grew, reaching a daily average of 150 within a few months. To these were added some University of California students hired part-time with Federal Emergency Relief Administration funds. The sheer number of workers required more space, so the field division set up additional laboratories in suitable buildings near the campus. To cope with the influx of untrained employees the Emergency Educational Program furnished instructors who not only taught craft skills but also produced illustrations and sculptures for use in park exhibits. The cumulative impact of ECW, PWA, CWA, SERA, FERA, and EEP challenged the administrative capabilities of Hall's division, as Depression programs did other Park Service units.[67]

The rising tide reached the Field Division of Education in November 1933. A few weeks earlier Carl Russell was hoping for a modest increase in personnel to help him handle museum work the parks were requesting. He proposed adding a curator, two taxidermists, a modelmaker/sculptor, and a draftsman/artist. Now he found his regular duties interrupted to prepare justifications for a vastly enlarged staff. In collaboration with Hall he had to plan its organization and survey the projects it should undertake. Most of December and January were spent getting the Civil Works people interviewed and assigned to jobs and supervising the new workers as they began exhibit preparation or data gathering. By December some of the new ECW technicians became available to help.[68] Two of them, Louis Schellbach and Arthur Woodward, were curators of professional caliber with whom Russell had shared research interests.

Russell's previous work at Yosemite and Yellowstone and in the Southwestern Monuments had taught him to plan thoroughly in advance of museum development. Before the burgeoning laboratories could produce

Field Division of Education, 1933. Technical staff in office at Hilgard Hall: (left to right) Louis Schellbach, Carl Russell, Ansel Hall, Arthur Woodward.

exhibits of acceptable quality, the museum planners and preparators would need much reliable data. ECW technicians, particularly Ralph L. Beal, and selected CWA workers promptly began the compilation of what would become an impressive number of background research reports drawn largely from published sources. Less specialized workers mimeographed and bound the reports for wider distribution. Over the years, also, Russell had spent much of his "leisure" amassing information on the western fur trade and park history and producing a definitive bibliography of scientific research conducted at Yellowstone. Not surprisingly, therefore, the CWA applicants he recommended included some librarians and experienced bibliographers. They began a massive annotated general bibliography of the national parks and monuments as well as projects for individual parks.

Russell's previous immersion in museum planning also doubtless contributed to a fresh formalization of that process. The Service had to construct several new museums without delay, and it had a large emergency staff of preparators ready to build exhibits. Both required well-conceived plans and precise specifications. A new Museum Development Plan was prescribed, closely linked with the evolving Master Plan concept.[69] The Field Division of Education and the Branch of Plans and Design were to collaborate in the preparation of this document, intended to fit museum functions and facilities into a park's total plan. The park superintendent would begin by defining the museum problem and proposing the facilities

needed. After approval of the development plan he would present his tentative requirements for the proposed museum building. The Field Division would review and refine these, in continued consultation with the park, and Plans and Design would prepare construction drawings and specifications. The Field Division of Education stood ready to help the park prepare and install the exhibits, but the procedure as laid down left responsibility for exhibit planning unassigned. During 1934 the burden of this step fell largely on Russell and Schellbach.

Because they could not keep pace with so many preparators, some minor chaos was unavoidable. Hall felt that every park could use a topographic model of its territory. With the Fort Hunt laboratory busy along the same line, the Berkeley shop produced a large relief map of Mount Desert Island, Maine, and shipped four heavy casts of it across the continent to Acadia National Park. Acadia unfortunately had no place to use even one of them. The Field Division also produced a large relief model of the area immediately east of San Francisco Bay, which had no direct usefulness in the interpretation of any national park. Questionably justified as an experiment to help train the map modelers and painters, it was displayed locally and probably represented an effort to publicize the operation.

Other measures to take up the slack had more utility. An assembly line began copying, hand coloring, and binding hundreds of lantern slides for use by park naturalists, although the diversion of the photographer to take innumerable promotional pictures of laboratory activities delayed production. Less skilled workers made wire tripods in assorted sizes to support round-bottomed Indian pots, many of which were likely to be exhibited in the new museums. Other workers stamped out thousands of metal nature trail labels.

In the midst of getting plans and production into full swing, Hall and Russell were summoned to Washington where the Educational Advisory Board was scheduled to consider museum matters. Russell left Berkeley in mid-February 1934 with instructions to visit en route several of the eastern parks proposed for new PWA museums. Vicksburg proved surprisingly attractive. "It would not be an unpleasant job to supervise preparation and installation of materials if a staff of preparators could be made available," he wrote his wife, envisioning the sort of field work he had done in the Southwest with laboratory support such as was developing in Berkeley. He noted that the three enthusiastic ECW historical technicians at Vicksburg had secured CWA workers to help with research but lacked any museum experience. Its absence showed in the "little tacky museum" they had assembled as a start.[70]

Russell reached Washington on Friday, February 23, in time to spend the afternoon at Park Service headquarters. Reporting to the Branch of

Research and Education proved a deflating experience. Its chief, Assistant Director Harold C. Bryant, was noncommittal. He implied that the Washington office had been considering Russell for the museum program in eastern parks but doubted his executive ability. Verne Chatelain, the chief historian on Bryant's small staff who was pursuing a vigorous program with increasing independence, made it clear that he wanted Ansel Hall to have no connection with the eastern museums. He would accept Russell's assistance but made no definite offer.[71]

The Educational Advisory Board met Monday morning. Museums did not come up for discussion until late afternoon, by which time most of the board members had slipped away. Hermon Bumpus and Waldo G. Leland remained along with several Service officials. Hall made a half-hour presentation, which seemed to his coworker from Berkeley particularly egocentric. Russell himself put one cogent question to Director Arno B. Cammerer: How would the development of museums in the new PWA buildings be financed? Apparently no one had thought to provide funding for more than the structures. CWA money, which was paying preparators in Berkeley, would soon terminate.

At the end of the day Russell turned to Bumpus in discouragement. They walked together the few blocks to the Cosmos Club on Lafayette Square, where Bumpus had a dinner appointment. In those few minutes he asked Russell what he wanted in regard to the museum program. "I told him that I wanted a Div[ision] of Mus[eums] and the place in it of Chief," Russell wrote his wife. "He replied that that was clearly impossible because of Ansel and that I should tell him of a second choice. Of course I told him that I'd like an Eastern office, preferably in charge of museum plans with particular responsibilities connected with Eastern Historical Parks." Bumpus assured him that this proposal matched his own ideas, despite Hall's opposition to splitting the museum work between East and West, and advised him to seek Leland's support.[72] Waldo Gifford Leland, director of the American Council of Learned Societies and successor to John Merriam on the Educational Advisory Board, stood in relation to Park Service historical programs much as Bumpus did toward park museums and interpretation.

The question of museum financing Russell had raised prompted the director's staff to ask the Public Works Administration to include furnishings in the museum building allotments. Furnishings necessarily implied exhibit planning, preparation, and installation. Bryant set Hall and Russell to drafting estimates and justifications for submission to PWA. The assignment took them the rest of the week, with Russell feeling he had done most of the work.[73]

On Saturday night Bryant invited his two assistants along with Hall and Russell to dinner at his home. The five men met at a time when rapid New

Deal changes seemed to intensify the normal rivalries, animosities, and aggrandizing maneuvers of the bureaucracy. The discussions did not spare sensibilities. They established beyond question that Hall and Russell were on opposite sides and that Russell could not expect from Hall or Bryant independence in the Field Division of Education. Verne Chatelain declared for an eastern office of museums that he himself would supervise. He would take either Hall or Russell, but one of them should move east. Earl Trager, Bryant's other assistant, had his Fort Hunt laboratories to defend. Under pressure Russell cautiously stated his interest in the eastern museum position "if conditions would warrant the change." At the end of the evening that appeared to be the direction matters would take.[74]

The following Monday Russell conferred briefly with Director Cammerer and his associates regarding the proposed move. Without a position established or funded, the only immediate prospect seemed to rest on finding expense money to support him in the East on detail. From this meeting he concluded that Associate Director Arthur E. Demaray and Conrad Wirth were the only men in Washington who really cared about his transfer and that Demaray, if anyone, would know how to effect it. The same day Bryant informed the director that he proposed assigning Russell to Fort Hunt in charge of an eastern section of Hall's field headquarters, "making a museum planner available near at hand so Chatelain can supervise the development plans."[75] Such an arrangement would leave him little chance for independent action.

The next day Bryant drove Chatelain, Hall, and Russell to Morristown National Historical Park, site of the biggest eastern PWA museum project. Chatelain concurred with Russell that Lafayette Hall, an available building adjacent to the Ford House in the park, would provide better facilities for a museum preparation laboratory than Fort Hunt. Besides, Morristown's proximity to the pool of unemployed artists in New York City outweighed Fort Hunt's convenient nearness to the director's office in Washington. They anticipated difficulty in convincing Bryant and Trager of these advantages, but Russell was ready to concede the existing relief model shop at Fort Hunt to Trager's control. When the others returned to Washington, Russell remained behind to lay the groundwork for an eastern museum operation.

He spent a day at the American Museum of Natural History in New York and met with James L. Clark, the man in charge of producing its widely acclaimed exhibits. Clark discussed optimistically the recruitment of preparators and offered his help in selecting qualified people. Probably at his suggestion, Russell stayed over to interview a man recommended as head of the proposed laboratory. After a long discussion Russell rightly concluded that in Ned J. Burns, chief of preparation at the Museum of the City of New York, he had found a valuable asset.[76]

This significant encounter occurred on March 9, 1934. The following day, after mailing Bryant a proposed staffing outline, Russell took the train back to Berkeley. He probably anticipated an early return, but eastern museum matters lay largely dormant for the next nine months while the necessary papers made their slow way through official channels. The remainder of 1934 found Russell hard at work on western museum projects in Berkeley and in the field. Scotts Bluff National Monument and the Moraine Park museum at Rocky Mountain National Park, both fur trade stories, demanded most of his time, but at least twenty other parks called for his attention. He labored at museum development plans, exhibit layouts and specifications, data gathering, supervision of artists, and administrative chores.

Finally, in mid-December, the Service received approval to transfer $65,000 from other PWA projects "to purchase and install equipment in various museum buildings which have been, or are being, constructed by this Service under the Public Works Program . . . ."[77] This sum enabled allotments for 13 museums, eight of them in eastern historical parks. It also covered the salary and travel for a museum expert. Bryant acted promptly to have Russell called to Washington on detail to get the work started. His arrival began a new phase in Park Service curatorial endeavor.

NOTES

1. Letter, Ralph H. Lewis to Carl P. Russell, Sept. 10, 1949, Yavapai folder, Correspondence Files, Grand Canyon National Park.

2. Henry R. Howland, "Chauncey J. Hamlin," *Hobbies* 10, no. 1 (July 1929): 1-3; George F. Goodyear, "Chauncey Jerome Hamlin," *Science on the March* 44, no. 2 (December 1963): 23-24.

3. U.S. Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year Ending June 30, 1920* (Washington: Government Printing Office, 1920), p. 50. Hereinafter cited as *Report of the Director for (year).*

4. *Hobbies* 2, no. 3 (July 1921): back page; ibid. 2, no. 8 (January 1922): 3-16; ibid. 3, no. 2 (July 1922): 9; Francis P. Farquhar, "First Ascent of the Middle Palisade," *Sierra Club Bulletin* 11 (1922): 270.

5. Lewis to Russell, Sept. 10, 1949; letter, Hall to Farquhar, Oct. 25, 1926, folder 362, box 70, Carl P. Russell Papers, Washington State University Library.

6. *Report of the Director for 1924*, p. 8.

7. Hall to Farquhar, Oct. 25, 1926.

8. Hermon Carey Bumpus, Jr., *Hermon Carey Bumpus, Yankee Naturalist* (Minneapolis: University of Minnesota Press, 1947), pp. 3-53.

9. Ibid., pp. 69-70.

10. Hall to Farquhar, Oct. 25, 1926.

11. Bumpus, *Hermon Carey Bumpus*, p. 103.

12. Hall to Farquhar, Oct. 25, 1916.

13. Ibid.; Carl P. Russell's diary, Russell Papers.

14. Bumpus, *Hermon Carey Bumpus*, p. 104.

15. Quoted in Russell note, folder 504, box 79, Russell Papers.

16. *Hobbies* 7, no. 3 (July 1926): 8; *Yosemite Nature Notes* 5, no. 7 (July 31, 1926): 53; ibid. 5, no. 12 (Dec. 31, 1926): 89-91; ibid. 6, no. 4 (Apr. 30, 1927): 30.

17. Biographical sketch, Yosemite National Park Library Separates, 921.2R; quotation from letter, Russell to C. Frank Brockman, Dec. 5, 1945, Yosemite National Park Library Separates 921.2 2p-7.

18. Letters, Russell to Harold C. Bryant, Oct. 2 and Dec. 6, 1923, folder 362, box 70, Russell Papers; *Yosemite Nature Notes* 3, no. 3 (Mar. 31, 1924): 2; ibid. 3, no. 6 (June 7, 1924): 2.

19. Carl P. Russell, "H. C. Bumpus Inspects the Yosemite Educational Project," *Yosemite Nature Notes* 7, no. 3 (March 1928): 20-23.

20. Hall to Farquhar, Oct. 25, 1926. The change in executive agents resulted in part from Bumpus's dissatisfaction with some aspects of Hall's performance in that capacity; see letter, Francis P. Farquhar to Chauncey J. Hamlin, Mar. 25, 1926, Exhibit History before 1936 box, NPS History Collection.

21. Frank E. Lutz, *Nature Trails* (New York: American Museum of Natural History, Miscellaneous Publications 21, 1926); William H. Carr, *Ten Years of Nature Trailing* (New York: American Museum of Natural History, 1937), p. 6.

22. Carr, *Ten Years of Nature Trailing*.

23. Memorandum, Chief, Division of Interpretation, to All Field Offices, Aug. 21, 1957, Planning box, NPS History Collection.

24. Merriam, *Published Papers and Addresses of John Campbell Merriam* (Washington: Carnegie Institution of Washington, 1938) 4: 2198-2211; Merriam remarks Aug. 6, 1932, Yavapai Museum folder, Correspondence Files, Grand Canyon National Park.

25. *Published Papers of Merriam.*

26. Jesse L. Nusbaum, *Annual Report of the Consulting Archeologist* (Washington: Department of the Interior, 1931), p. 3; letter, Merriam to Minor R. Tillotson, June 18, 1929, Yavapai

Museum folder, Correspondence Files, Grand Canyon National Park; Lewis to Russell, Sept. 10, 1949.

27. Letter, McKee to Merriam, Nov. 9, 1931, Yavapai Museum folder, Correspondence Files, Grand Canyon National Park.

28. Letter, Bumpus to Russell, Apr. 18, 1928, folder 362, box 70, Russell Papers; Russell Diary, Oct, 2, 1928, red folder, Russell Museum Planning 1928-33 box, Richard W. Russell Personal Files.

29. Russell Diary, Nov. 15 and Dec. 17, 1928.

30. Merriam et al., "Individual Reports of the Committee on Educational Problems in National Parks," pp. 11-12, History of Interpretation to 1935 box, NPS History Collection.

31. Merriam et al., *Reports with Recommendations from the Committee on Study of Educational Problems in National Parks, January 9, 1929, and November 27, 1929* (Washington: Department of the Interior, n.d.), p. 3.

32. Maier, "Building a Maya City in Buffalo," *Hobbies* 9, no. 10 (June 1929): 333-41, 352.

33. Russell Diary, Nov. 1-14, 1928.

34. Ibid., Nov. 15, 16, 18, 21-30, Dec. 1-2, 1928.

35. Ibid., Dec. 5-12, 1928.

36. Ibid., Dec. 13, 15-18, 1928.

37. Merriam et al., "Individual Reports of the Committee on Educational Problems in National Parks," p. 12.

38. *Report of the Director for 1930*, p. 190.

39. Russell, Report of Field Naturalist-Museum Advisor for July 1929, Richard W. Russell Personal Files; letters, Russell to Betty Russell, July 7, 11, 14, 16, 19, 22, 23, 31, 1929, ibid.; *Report of the Director for 1929*, p. 16.

40. Russell, Reports of Field Naturalist-Museum Advisor for August-September 1929; letters, Russell to Betty Russell, July 25 and 31, 1929.

41. Letter to Betty Russell, Jan. 23, 1930.

42. Letters, Russell to Betty Russell, Jan. 5, 18, 22, 26, Mar. 26, 27, 1930.

43. Russell, Reports of Field Naturalist-Museum Advisor for April and July 1930.

44. Russell, Reports of Field Naturalist-Museum Advisor for April and September 1930.

45. Russell, Reports of Field Naturalist-Museum Advisor for April-November 1930.

46. Russell, Reports of Field Naturalist-Museum Advisor for June-August 1931.

47. Draft letter, Russell to Robert C. Wheeler, Apr. 9, 1963, folder 568, box 94, Russell Papers.

48. Laurence Vail Coleman, *The Museum in America* (Washington: American Association of Museums, 1939) 2: 265: "This method of display has its values and its dangers. It is thoughtful and awake. It can narrate—which is an important point for history museums. But it falls easily into making what is little more than an illustrated book—big and cumbersome and looking like an exhibit, but really a book all the same. This practice can lead on to indoctrination. It gets away from what museums are for—to give evidence, primarily."

49. Russell, "The Rocky Mountain Museum: A Report," September 1931, Richard W. Russell Personal Files.

50. Letter, Russell to Betty Russell, July 9, 1933.

51. Hall, "Some Suggestions for the Organization of the Educational Department, U.S. National Park Service," Jan. 19, 1925, Philosophy of Interpretation 1917-47 folder, History of Interpretation to 1935 box, NPS History Collection.

52. *Report of the Director for 1925*, p. 136.

53. Hall, "Some Suggestions for the Organization of the Educational Department," p. 7.

54. Letter, Horace M. Albright to Arno B. Cammerer, July 15, 1927, Philosophy of Interpretation 1917-47 folder, History of Interpretation to 1935 box, NPS History Collection.

55. *Report of the Director for 1931*, p. 134; letter, Betty Russell to Russell, May 10, 1933.

56. "General Plan of Administration for the Educational Division," Philosophy of Interpretation 1917-47 folder, History of Interpretation to 1935 box, NPS History Collection. The plan did not mention museological expertise as required of the field naturalists proposed to assist the chief naturalist.

57. "Proceedings of the First Park Naturalists' Training Conference Held at Educational Headquarters, Berkeley, California, November 1 to 30, 1929," Interpretive Conferences 1929-58 box, NPS History Collection; Coleman, *Manual for Small Museums* (New York: G. P. Putnam's Sons, 1927).

58. Report of Field Naturalist-Museum Advisor for August 1930.

59. Reports of Field Naturalist-Museum Advisor for November 1930 and October 1931.

60. Letters Russell to Betty Russell, Mar. 3, 6, 10, 22, 1932, Apr. 19, 30, 1933, Russell Museum Planning 1928-33 box, Richard W. Russell Personal Files.

61. Letters, Russell to Betty Russell, July 17, 19, 1933, ibid.

62. Hall, "Report on the Development of Yavapai Station, Grand Canyon National Park, June 1930 to January 1931," Grand Canyon National Park Library; *Report of the Director for 1931*, p. II. Hall's change of title from chief naturalist followed his placement under the Branch of Research and Education in the Washington Office. During 1930 and 1931 Hall's relationship to Merriam paralleled that of Russell to Bumpus. Because Bumpus and Merriam were then at odds over specifics of park educational development, their disagreements threatened to affect the relationships between Hall and Russell, who was his subordinate. Russell wrote his wife on February 24, 1931: "Hall is to work with Merriam on museum projects. Things are rather tense and it is evident that Bumpus is incensed with Merriam and Atwood." She replied: "How can both of you work on museum work? And how can two organizations build museums in the parks without coming to blows?" (Letters in Russell Museum Planning 1928-33 box, Richard W. Russell Personal Files.) Merriam's resignation from the Educational Advisory Board in 1931 and his replacement as chairman by Bumpus defused the immediate situation.

63. Russell Diary, Richard W. Russell Personal Files.

64. Conrad L. Wirth, *Parks, Politics, and the People* (Norman: University of Oklahoma Press, 1980), pp. 65-127.

65. Hall, "Summary of Activities, Field Division of Education, Berkeley, California, from July 1933 to March 1935," pp. 13, 19, Annual Reports, Branch of Interpretation box, NPS History Collection; "Progress in Research and Education" (draft material for 1934 annual report), ibid.

66. The western projects were for Aztec Ruins, Devils Tower, Scotts Bluff, and Tumacacori national monuments (the latter included later) and Hot Springs National Park; the eastern ones were for Chickamauga and Chattanooga, Fredericksburg and Spotsylvania County Battlefields Memorial, Guilford Courthouse, Shiloh, and Vicksburg national military parks and Morristown National Historical Park.

67. U.S. Department of the Interior, *Annual Report of the Department of the Interior, 1934* (Washington: Government Printing Office, 1934), pp. 165-67; Hall, "Summary of Activities, Field Division of Education," pp. 11, 14, 16.

68. Memorandum, Russell to Hall, Oct. 23, 1933, Philosophy of Interpretation 1917-47 folder, History of Interpretation to 1935 box, NPS History Collection; Russell Diary; *Park Service Bulletin* 3, no. 8 (December 1933): 18.

69. Office Order No. 265, Mar. 15, 1934, Museum Policy binder, NPS History Collection.

70. Letter, Russell to Betty Russell, Feb. 20, 1934, Richard W. Russell Personal Files; Russell Diary, Feb. 19, 1934.

71. Letter, Russell to Betty Russell, Feb. 23, 1934, Richard W. Russell Personal Files; Russell Diary, Feb. 24, 1934.

72. Letter, Russell to Betty Russell, Feb. 26, 1934, Richard W. Russell Personal Files.

73. Letter, Russell to Betty Russell, Mar. 2, 1934, ibid.

74. Letter, Russell to Betty Russell, Mar. 3, 1934, ibid.

75. Russell Diary, Mar. 5, 1934; memorandum, Bryant to Cammerer, Mar. 5, 1934, 1934 Museums folder, Annual Reports, Branch of Interpretation box, NPS History Collection.

76. Russell Diary, Mar. 6-9, 1934.

77. Memorandum, unsigned but probably from Hillory A. Tolson to Bryant, Dec. 19, 1934, 1934 Museums folder, Annual Reports, Branch of Interpretation box, NPS History Collection.

THE MUSEUM DIVISION, 1935–1946

The decision to place development of museums for the eastern historical parks in the hands of the National Park Service's most experienced museum worker led to results of wider import. It established a museum staff capability in the director's office that would remain uninterrupted for 35 years, until creation of the Harpers Ferry Center. It in turn stimulated the definition of Service-wide policies and procedures aimed at making park museums equal to any in America in terms of professional practice. It promoted the concept of a central staff to serve all park museums, a necessary factor in attaining professional standards. The activities of the central staff helped forge a unified chain of museums, each under the local control of the park superintendent but sharing a common nucleus of professional skills and guidance.

In 1935 history museums as a class lagged behind museums of art or natural history in numerous ways. The Park Service plunge into this backwater added substantially to the fund of ideas about history museum aims and methods. Most park museums also represented a distinct and as yet poorly defined category, now known as site museums. Here, too, the Service made important contributions to theory and practice On the eve of America's entry into World War II, publication of the *Field Manual for Museums* won for the Service a position of international repute in museology. Meanwhile, the funding of park museum work eluded a stable solution.

The Eastern Museum Division

Carl Russell reported for duty in Washington on January 17, 1935. He found that the Branch of Research and Education had done nothing on the eastern museum projects while waiting for the allotment of funds to "equip" the new buildings already under construction. The fiscal year during which the money would be available was already more than half gone. His three branch colleagues had no real understanding of the task he faced and little incentive to help. Harold Bryant, the assistant director in charge, did not rate museums as important components of park interpretive programs and regarded Russell's assignment as a temporary measure to meet a passing need.[1]

Verne Chatelain had a stronger interest in museums for historical parks. He considered them part of the domain he stood on the verge of winning in his fight for a separate branch of history. But he did not foresee more than a subordinate role for Russell, whom he thought would merely produce exhibits specified by the historians. Neither Chatelain nor Bryant sensed

what Russell saw clearly: that museums required thorough, knowledgeable planning. The field historians were not equipped by training or experience to prepare such plans. When Chatelain came to realize that Russell would have to provide the plans as well as produce the exhibits, he tried more obtuse methods of control.[2]

Earl Trager as chief of the Natural History Division had less involvement in Russell's mission because it concerned the historical parks primarily. But circumstances made him somewhat hostile as well. The new museum projects posed a threat to Trager's operation of the shop at Fort Hunt, and he would soon lose an even more cherished responsibility. The secretary of the interior's office was absorbing his Visual Education Section, taking the staff and equipment with which the Natural History Division was carrying on an active program of still and motion picture photography. Moving Russell into the office space vacated by the section rubbed salt in the wound.

The newly arrived museum expert thus began work at cross purposes with the branch establishment. He foresaw a museum division that would provide the continuing professional basis for the Service's entire museum program.[3] Sharing this vision not at all, Bryant was justified in considering Russell's status temporary. Furloughed from his permanent civil service post, Russell became a PWA employee on January 19. The PWA appropriation would expire on June 30 and Congress had not acted to assure any extension of the program. The $65,000 allotment for eastern museum projects had to cover his salary and travel, the hiring of equally temporary museum planners and preparators, the purchase of exhibit cases and library furniture for the museums under construction, and the equipping of an exhibit production laboratory. It also had to pay for his office furniture and secretary.

Before Russell could start to analyze these needs, museum matters at Colonial National Monument called him away. He spent eight days at the park trying to get the staff started on a museum development plan. Superintendent Floyd Flickinger's younger brother showed the most interest and agreed to undertake the assignment. For several months Russell nursed the hope that the finished plan could serve as a model for other historical parks. But the local staff could not decide among various proposals for future development, and the plan failed to materialize. The only solid accomplishment of the visit was a rough exhibit plan for a temporary installation. Russell worked it out with the historians and architects at the park to fit the reconstructed kitchen of the Swan Tavern complex at Yorktown. It provided about all that Colonial's $3,050 share of PWA funds might suffice to produce.[4]

After only a few days back at his desk another matter requiring a museum expert again diverted Russell from the main task. Fort McHenry,

one of the parks transferred from the War Department in 1933, would shortly acquire by gift the E. Berkley Bowie Collection of some five hundred items, mostly firearms. The Service wished to have them on display by September 12, Francis Scott Key Day. Russell spent two days in Baltimore studying the available space and viewing the collection. The trip allowed him a long evening of discussion with E. W. W. Hoyt, Baltimore-based museum case salesman for Remington Rand, Inc. This company had taken over the business of A. N. Russell and Sons, manufacturers of Library Bureau and Russell-Built exhibit cases. Carl Russell knew from his Yellowstone experience that these cases with their narrow extruded bronze or aluminum frames, polished plate glass, and virtually dust-tight construction offered both protective and visual qualities he wanted park museums to have. Hoyt, driven by the depressed economy, was ready to work hard for a sale.

Hoyt gave Russell all the help he could in working up specifications for the exhibit cases to be purchased under the current PWA program. Russell welcomed this help, for the procurement deadline did not give him time to wait for completion of the exhibit plans, and he could not even visit each park scheduled to receive cases. Hoyt joined in talks with the architects to assure compatibility with planned interior spaces and finishes. He could also detail the intricate extrusions for the case frames, which had special features such as channels to hold filter wicks. Both men fulfilled their intentions in this collaboration. At the bid opening on June 10 Remington Rand submitted the only bid and obtained the $22,000 order. Russell got the quality products he wanted, and Hoyt his salesman's commission. Hoyt continued to be helpful, pushing the Fort McHenry cases through production in time for the September event.[5]

Hoyt also let Russell know that Albert Brill Russell needed a job. A. B. Russell understood the fabrication of museum exhibit cases as well as anyone in the business. He could match Hoyt's skill in drafting practical specifications and do so without direct ties to any single manufacturer. A grandson of A. N. Russell and son of a former Library Bureau president, he had managed the museum case factory for years. After Remington Rand took over, he was replaced. Carl Russell hired him in the summer of 1935 as museum equipment engineer. He remained a valuable staff member as long as PWA-funded projects required the procurement of exhibit cases.[6]

A. B. Russell contributed more than the meticulous detailing of case construction. His sensitivity to needs voiced by curators and preparators set in motion a progressive modification of cases for use in the parks. Case bases increased in height to bring specimens into optimum viewing range. Other changes in dimensions, lighting, and glazing followed in later years as did the development of cases recessed into walls without sacrificing secure, dust-tight but accessible enclosure. A. B. Russell also established

a pattern of good working relationships with case manufacturers that continued for at least 25 years.[7]

Carl Russell's visit to Baltimore had emphasized in other ways the urgency of his staffing problem. The eastern museum program needed both preparators to build exhibits and planners to plan them. Russell proposed sending planners into the parks where PWA-funded museums were under construction. He wanted people with at least some museum training or experience and with a solid background in American history. When this combination proved practically impossible to find, he chose to accentuate the museum component by calling the positions curatorial, although they scarcely fitted the definition. Having drafted job descriptions for three grades—field curators to be paid at the annual rate of $2,900, assistant curators at $2,300, and museum assistants at $1,800—he started recruiting.

Returning from a visit to the American Museum of Natural History, where Clark Wissler recommended three of his Yale graduate students, Russell stopped at Morristown to check on progress.[8] A fresh look at the Morristown collection after he had seen the gun collection for Fort McHenry convinced him that he needed a real curator expert in firearms. His search led to a government employee in Washington who collected antiques as a hobby and had a special interest in weapons. John A. Sachse entered on duty March 19, 1935, apparently the first Park Service employee to bear the title of curator. After two weeks of preparation in Russell's office he went to Morristown to help develop the new museum at the park. There Vernon Setser, an ECW historical technician assigned from the park staff to prepare the exhibit plan, was trying to apply Russell's concept of a narrative museum, while Sachse favored the old method of simply displaying the whole collection with minimal explanation. His lack of academic qualifications hindered communication with his colleagues, and his organizational relationships with them were vague. Under these circumstances he left his post without orders in August and returned to Russell's office in Washington.[9]

Russell sent Sachse immediately to Fort McHenry, where his knowledge of guns was needed in a less complex situation. There he laid out and installed a temporary display of the Bowie collection in time for the September celebration. Afterward he catalogued the Bowie collection, photographed the objects in it, and prepared temporary labels. Then he demonstrated a growth in understanding by successfully planning a more permanent gun exhibit based on the collection. In line with Russell's progressive museological ideas his plan called for installing a selection of weapons and accouterments to outline the story of firearms in American history. Numerous illustrated labels would supplement the specimens. The bulk of the Bowie material would comprise a study collection in visible storage on the second floor. The plan also pointed out the environmental

hazards of the harbor-side location and the necessity of regular inspection and preservative treatment. Approved and carried out, this plan along with the collection catalogue marked Sachse's principal contribution. He went on to draft plans for a narrative exhibit to tell the Fort McHenry story and worked briefly on weapons collections at the Fredericksburg battlefield park and Morristown before his death in August 1938.[10]

In March and April 1935 seven prospective curators received notice of their appointments, two as assistant curators and five as museum assistants. Like all PWA positions, these were filled from a list maintained in the secretary of the interior's office. Getting on the list required the endorsement of the local Democratic Party chairman at the applicant's place of residence, although not every chairman questioned every applicant's party affiliation. In any case, Russell apparently got the men he requested. Each of the seven had some museum-connected experience, but science rather than history predominated in their graduate training. Most were archeologists or ethnologists, one was a botanist, and one was an entomologist. They all accepted appointments that extended only to June 30.[11]

Each appointee reported to Russell in Washington for indoctrination before proceeding to the park where he would become a paid employee. His first assignment, he learned, would consist of preparing a general museum development plan, or prospectus as it was later termed. Collaborating with ECW historical technicians in the park, he would have to decide what facts and ideas the proposed museum needed to communicate. With the subject matter in succinct narrative form he would then outline the number and nature of exhibit units to accomplish this. The narrative and exhibit outline constituted the development plan. As soon as he submitted it, he was to start work on a detailed exhibit plan, called the museum master plan, specifying the content of each unit. Russell also felt it necessary to take each novitiate privately to the lounge of the Powhatan Hotel a few blocks up 18th Street, where he could speak freely about the serious antagonisms that existed in the Branch of Research and Education. The projected museum plans would have to navigate these troubled waters to gain approval.[12]

The novice curators carried with them a written guideline as well. Addressed to them and signed by Associate Director Arthur Demaray, it outlined the objectives of park museums, told how museum work in the Service was organized, and defined seven steps in the process of developing a park museum. What no one but Russell fully understood was that it also constituted the preliminary charter for the museum division he was striving to get established. The procedures it prescribed looked more to the future than to established practice. It followed closely the wording of a proposed Service-wide code of procedure he had drafted, whose full scope neither Bryant nor Chatelain was ready to approve. The code was in fact a

carefully studied revision of one prepared by Ansel Hall that would have confirmed Hall's central role in the museum program and left Russell at best as his eastern representative. Russell had begun rewriting it before being asked. Official recognition of his title as Chief, Eastern Museum Division, independent of Hall followed within a month Demaray's signature of the memorandum to the curators.[13]

The memorandum contributed to another effect perhaps not consciously intended. It stated clearly that "scientific and historical collections form the foundation for most exhibits" but conditioned this axiom by pointing out that graphic devices could help exhibits tell their stories. Reference to the versatile array of artists and craftsmen at the museum laboratory underlined the potential availability and usefulness of pictures, maps, models, and other visual aids. This reinforced several factors tending to diminish the role of historic objects in the museums being planned. The military parks to which the planners went lacked substantial collections of appropriate artifacts, even though some might have tons of unprocessed battlefield debris. Neither the curators nor the historical technicians could identify and interpret such objects in more than a rudimentary way, for scholarly study of material culture had as yet produced few reference works to help them. Few historical museums had tried to present a narrative history by means of specimens. No one really knew how to do it. The planners, on the other hand, could readily turn to the recently published 15-volume *Pageant of America* and the older 10-volume *Photographic History of the Civil War* to see for themselves how effectively pictures could combine with relatively brief texts for this purpose.[14]

In consequence, the first batch of eastern exhibit plans relied on graphic devices much more than on artifacts, prompting the following description of the first museum installation:

> The planners . . . ignored the existing collection of historical relics. Illustrations were chosen on the basis of effectiveness. Even when pertinent objects were available, they were rejected if other devices seemed better. . . . The result is a historical museum almost without relics! In their place specially prepared paintings assume considerable importance. Maps, diagrams and models are used frequently. Most of the historical objects that are displayed merely supplement the vital illustrations and are placed on the floor of the cases.[15]

The description applied equally to contemporaneous historical installations in such western parks as Scotts Bluff, which Russell had planned the previous year. The guideline document had led park museums into an experimental mode that would produce further changes in current practice.

The initial experiments began in April as each planner/curator entered on duty at his park. Kenneth B. Disher went as curator and Nathaniel Everard as museum assistant to Chickamauga and Chattanooga National

Military Park, museum assistants Alden B. Stevens and Robert D. Starrett went to Shiloh, curator John C. Ewers and museum assistant Ralph H. Lewis went to Vicksburg, and Morris Titiev went alone as curator to Guilford Courthouse.[16] They set to work with little time to spare before their jobs terminated at the end of June. A joint resolution of Congress approved April 8 gave the President $5 billion to fund the various emergency relief agencies for another two years, but money to continue the eastern park museum projects was not released to the Service until February 1936. Russell did receive authority to prolong the current work beyond June 30, but for only one month. He made a quick trip to check on the progress of his planning curators, visiting Guilford Courthouse on June 24 and going on to Chattanooga the same night. Stevens and Lewis met him there with drafts of the Shiloh and Vicksburg plans. After reviewing the work accomplished so far, he sent Stevens to Great Smoky Mountains, Lewis to Hot Springs, and Titiev to Antietam National Battlefield Site to start museum plans there.

By the cutoff date Russell had obtained seven museum development plans and five exhibit plans from the curators he had sent to the parks. None of the exhibit plans contained all of the detailed specifications required for production. Work had to stop before that point, the men having been told that if they returned to Washington at their own expense, the Service would rehire them for another temporary project. Although his insistence that intensive planning precede exhibit preparation had not netted Russell a single completed exhibit plan, he felt the need to demonstrate the nature of these documents. He chose a sixth plan, equally incomplete but done under his watchful eye, to reproduce and distribute as an example.[17]

The success of Russell's eastern assignment and the future of his hopes for a museum division depended on getting exhibits prepared and installed in the new museums being built through PWA. He did not wait to have the exhibit plans in hand before setting up a central exhibit preparation facility. Lafayette Hall at Morristown had been selected the previous year as the best location. In February 1935 he began purchasing supplies and hiring preparators.

Arthur Ohlman, a versatile craftsman, was the first, followed by Wilfrid Swancourt Bronson, John W. Dawson, and Rosario Fiore. Bronson had accompanied the Bingham Expedition as artist and had already begun his career as a prolific writer and illustrator of children's books on various aspects of animal life. Dawson was trained particularly in oil painting. Fiore, a sculptor, adapted well to the miniature scale usually needed for museum exhibits. The preparation staff increased by six in late March: Joseph Andrews, a sculptor who later served as principal preparator for the National Museum's Department of Anthropology; Otto H. Jahn, a general preparator who specialized to a degree in large maps; artists Basil E.

Eastern Museum Laboratory at Morristown, c. 1936. Preparator Wilfred Bronson and curator John Ewers collaborate on an exhibit.

Martin and Harry C. Wood; Wilfred J. Mead, a technician and photographer who had worked under Russell at Yellowstone; and David H. Stech, probably an artist. By the end of May the group included at least two more artists, Joseph Colgan and Lloyd W. Biebigheiser.[18]

Having a talented staff at this stage created two temporary problems. Russell needed to find appropriate work for the men pending completion and approval of exhibit plans, and someone had to manage a potentially volatile crew. Several of the artists pitched in to make layouts and sketches for the Morristown exhibit plan. Others built and installed some orientation displays for the Statue of Liberty, which the Service had recently acquired. When it became clear that Vernon Setser, the Morristown historian acting as museum planner, should not shoulder the extra task of shop manager, Ohlman served as interim leader.[19]

The new eastern museum program entailed a multifaceted workload that grew quickly. Russell found that he needed an assistant to oversee the planning and another to supervise exhibit preparation at Morristown. He soon had in mind the men he wanted for these two assignments but could not justify under PWA a pay rate to match their existing salaries.

The planning aspect being more urgent, he asked first for the transfer of Louis Schellbach from Berkeley. Schellbach understood from experience what park museum plans should accomplish and had amply demonstrated professional knowledge, skills, and energy for the task. His ECW status in the western program made it possible to offer him $3,800 rather than the

lower amount set in the PWA schedule. A telegraphic order from Associate Director Demaray proved necessary to force his move over Ansel Hall's resistance. Schellbach reported in Washington on April 12, and for the next month and a half he gave good support to the planning program for the six PWA park museum projects. He found the office strife and administrative constraints frustrating, however, and some of his actions threatened to upset carefully nurtured relations with the architects. In early June Russell shifted him to a fresh planning job that suited him better and kept him productively engaged until he returned to Berkeley in September.[20]

Before the architectural problem came to a head, Russell had obtained his other assistant. It took only two encounters with Ned Burns to convince him that Burns was the "best man I know of in preparation."[21] Burns in fact knew a great deal about museum work besides exhibit preparation. As a schoolboy he had discovered the Staten Island Museum near his home. Under the tutelage of William T. Davis and Charles W. Leng, museum volunteers and renowned amateur entomologists, Ned received field training in observation and interpretation that any park naturalist might envy. When his father's death ruled out college and required him to help support the family, the Staten Island Museum offered him a job as guard. His duties included janitorial work, serving as projectionist for public lectures, giving talks and tours, and preparing exhibits that included three creditable miniature groups. After five years he joined the preparation staff at the American Museum of Natural History, where he learned taxidermy among many other skills. At night he attended classes in design, painting, and sculpture at the New York School of Industrial Arts and the Art Students League.

After nearly six years at the American Museum Burns was offered the post of chief preparator for the newly organized Museum of the City of New York. Burns did more for the museum than create outstanding exhibits. He served as its business manager and later as assistant director. His responsibilities ranged from hiring guards and maintenance staff to defending the budget at city hall. In the process he gained a working knowledge of local politics down to the ward level. All this helped equip him to administer a major national museum program.[22]

When Russell conferred with Burns in New York on February 23, he had little hope of attracting him to the Park Service. The museum paid Burns several hundred dollars more per year than the Service could offer. It must have been a surprise to receive an application from him in March stating that he would accept a salary of $3,800. To meet that price Russell probably had to wait until Schellbach's transfer to PWA set a precedent. By the end of April worsening conditions at the inadequately supervised preparation shops led him to recommend Burns' appointment as superintendent of field laboratories at Morristown. The salary grade delayed

approval, but Burns entered on duty June 3. He reported for a brief introductory assignment in Washington while Russell's architectural problem was boiling.

Until 1934 the architectural development of park museums proceeded smoothly. Herbert Maier designed most of the museum buildings and supervised their construction. Through his association with Hermon Bumpus and the Buffalo Museum of Science he gained an understanding of the special functional needs that characterize museums. He also worked comfortably within Park Service design constraints, which called for the use of native materials and a rustic style fitting the natural settings. Jesse Nusbaum, who designed the Mesa Verde museum building, also knew from experience what kinds of space a museum required. At Yosemite and Yellowstone Russell learned to work hand-in-hand with the architect as he planned and installed exhibits. Such collaboration continued when the 1934–35 PWA program funded five new museums in western parks. Service architects in the San Francisco office tackled the building designs and specifications in coordination with exhibit planning being carried on by the augmented curatorial staff headquartered at Berkeley. Architect Leffler Miller served as an effective go-between, working in the field with exhibit planners while keeping in close touch with his professional colleagues preparing the building plans.[23]

The simultaneous PWA program in the East faced a different set of circumstances. The influx of historical parks from a government reorganization in 1933 brought the Service many architectural problems. The new areas contained numerous historic structures in critical need of preservation or restoration. They also lacked buildings of various kinds necessary for their increased public use. The Branch of Plans and Design promptly set up an eastern division under Deputy Chief Architect Charles E. Peterson to prepare designs and specifications and inspect the work of construction contractors.

The 1934–35 PWA allotments provided for new combination administration/museum buildings in five eastern parks: Chickamauga and Chattanooga, Guilford Courthouse, Shiloh, Vicksburg, and Morristown. The eastern architectural staff undertook planning for the first four and contracted Morristown, the largest, to New York architect John Russell Pope, who had designed the Roosevelt Memorial Wing for the American Museum of Natural History and would soon be awarded the architectural contract for the National Gallery of Art. Adapting its design guidelines to the eastern situation, the Service called for buildings that would reflect in style and materials local structures characteristic of the historical period commemorated by each park.

By the time a museum expert who could advise the architects became available in the director's office, three of these projects were already under

construction. Plans for the other two were completed in the spring of 1935.[24] Predictably, those designed by Service architects without special knowledge of museum requirements proved ill-suited to their purpose. The Vicksburg building resembled so well an antebellum plantation mansion that a later superintendent converted it to his residence and packed the museum off to a utilitarian frame structure elsewhere in the park. At Chickamauga the museum occupied a balcony overlooking the lobby. Not only was access by a single stairway poor and perhaps hazardous, the space opened onto the lobby along one side and had windows along the opposite wall leaving only the short end walls as convenient exhibit areas.

After Russell arrived in Washington, he lost no time in establishing contact with the architects. When he could study their plans more closely, he found that the "Branch of Plans and Designs [sic] guards the interiors they are building quite as carefully as they do the exteriors." He could hardly blame the architects for the poor treatment of museum needs, for his own branch had done nothing to define them. Instead he resolved to work as best he could within the shortcomings of the projects underway to build a solid basis of cooperation for the next round of new museum facilities.[25]

Louis Schellbach nearly spoiled the scheme. Working with the planning curators, he incited some of them to challenge the architects and demand changes, mostly the closing of windows. His objections were valid but untimely. When they involved Pope's plans for Morristown, Tom Vint, chief of Plans and Design, called for a top-level conference. He appreciated the deficiencies in design but needed to establish acceptable procedures. His understanding leadership and Russell's commitment to shared responsibility in museum planning insured that curators and architects would do their best to keep in step as they worked on such projects. Although the immediate future gave relatively few opportunities to practice the principle, continual interplay between the two professions over the years clearly benefited Park Service museums.[26]

Russell's dream of a central museum division to serve all the national parks became a reality on December 2, 1935, when Director Arno B. Cammerer signed Office Order No. 312. "Until further notice, all matters pertaining to museum activities of the national park system will be handled by the Museum Division, Branch of Research and Education, of which Division Dr. C. P. Russell is hereby designated as Chief," it stated in part. "The functions of the Museum Division are to supervise and coordinate all museum activities, including those of the Field Education Division, the new Interior Building Museum, the Museum Laboratory at Morristown, New Jersey, and the Fort Hunt (Virginia) Model Laboratory."[27] The order terminated the brief existence of the Eastern Museum Division as an organizational unit.

The Interior Department Museum

The Department of the Interior faced what Secretary Harold Ickes saw as an identity problem. The average taxpayer could surmise what most federal executive departments did from their names—Agriculture, Commerce, Post Office, Treasury, and War, for example. But what did Interior do? To help answer this question Ickes decided to establish a museum whose exhibits would explain the history, purposes, and activities of the various bureaus. The construction of a new building for the department provided the opportunity to carry out his idea.

In mid-February 1935 Associate Director Demaray told Russell he was recommending to the secretary that Russell serve on a small committee for the proposed museum. Russell gave the matter little thought for several weeks until he learned that he was chairman of the committee and that Ickes expected action. The committee promptly conferred with the architect for the new building and learned that he was allowing less and less space in the floor plans for a museum. His tune changed late in April after the secretary made it evident that he was in earnest. The museum would occupy an entire wing of the first floor close to the main entrance. Russell was still unenthusiastic but ruefully conjectured that "one fool minor project like one museum in Washington, D.C., will probably be the salvation of a coordinated national program of museums in the National Parks."[28]

Russell got busy contacting the various bureau heads and estimating costs. When the Service received notice on May 24 that a $100,000 PWA allotment for the Interior Museum would be forthcoming, the project became an urgent activity of his division. He seized the opportunity to reassign Schellbach as chief curator of the museum beginning June 1 and make him responsible for producing the necessary plans. The initial phase would be especially complex, so Russell assigned Ned Burns to help. Burns, who was just entering on duty, needed to become familiar with the overall organization of Park Service museum work anyway, so his introductory stay in Washington served a double purpose.

Schellbach and Burns spent the first half of June developing a scheme to convert the space designed for offices into a functional exhibit hall. They had to cope with a long, narrow, rather low-ceilinged wing containing a double row of load-bearing columns. They also had to work out reasonable adaptations of wiring, heating, and air conditioning provisions not originally intended for museum purposes. Their solution involved a system of furred walls dividing the space into alcoves that provided a well-defined area for each bureau's exhibits. The alcoves would be cove-lighted and the walls would accommodate recessed cases designed to roll out for access to wiring and ducts. In mid-June Burns took up his post as superintendent of the preparation laboratory at Morristown well acquainted with the physical

requirements of its first big production job.[29] Schellbach continued on the detailed planning for conversion of the wing and by the end of July was ready to have exhibit planning start.

Four of the planning curators whose appointments terminated July 31 returned to Washington to work on the Interior Museum. Schellbach assigned Kenneth Disher to the Bureau of Reclamation exhibits, John Ewers to those for the General Land Office, Morris Titiev to those for the Bureau of Indian Affairs, and Ralph Lewis to those for the Bureau of Mines. Fritioff Fryxell joined them to prepare the Geological Survey plan. Titiev transferred to Chatelain's staff in the new Branch of Historic Sites and Buildings after about two months and Alden Stevens succeeded him. Stevens also worked on the National Park Service alcove.

Each curator had to consult with bureau officials, digest the information the bureau wanted to present, develop an acceptable story sequence, and then prepare detailed exhibit specifications including label copy. The curators had no office but worked at their planning around a large reading table in the stacks of the Geological Survey library. After Schellbach transferred back to the Field Division of Education at Berkeley in September, Fryxell filled in as acting chief curator until late October when his promised appointment in Berkeley became available. Russell then assigned coordination of Interior Museum planning to Disher. The curators submitted exhibit plans for five of the bureaus during October.[30]

On the average the Interior exhibit plans made better use of specimens than had those for the first round of historical park museums. Some of the subject matter, including Indian material culture and technological aspects of surveying and mining, lent itself to objective illustration. When finally installed, the museum's 95 exhibit units contained a thousand objects. The museum also had to deal with unavoidably prosaic matters of bureaucratic policy and organization, which were difficult to make visually stimulating. To counterbalance less exciting displays, the plans called for increased use of dioramas, including ten of these popular devices. Miniature groups modeled in perspective and blended into painted background scenes were not new to museums, although calling them dioramas was a recent misnomer. They had captured the imagination of many visitors to the 1933 Century of Progress Exposition in Chicago. The fact that Ned Burns was an acknowledged master in the art of diorama creation doubtless influenced the planners as well.[31]

At Morristown Burns readied the laboratory to start production of the Interior Museum exhibits as quickly as progress on the curators' plans would allow. He could appreciate the influence the project might have on the future of the Park Service museum program. The laboratory's handiwork would stand on display at the seat of power. The secretary of the interior, the director of the National Park Service, and their principal

lieutenants would inevitably see and react to the exhibits. On this evidence the decision-makers would tend to judge the capability of the Service to create park museums of creditable quality and functional value.

To meet the challenge Burns strengthened the preparation staff. First he brought in two young men who had worked under him before on difficult and successful dioramas. Donald M. Johnson and Albert McClure, who possessed fine manual skills and a knowledge of the technical problems involved, would become mainstays of the prewar laboratory and in due course assistant chief preparators. Their arrival gave Burns 21 people hard at work on the Interior Museum exhibits by the end of 1935: twelve preparators, three per diem carpenters, and three additional per diem helpers along with John Ewers as field curator, A. B. Russell as equipment engineer, and Maxwell S. Fulcher as clerk. Preparation was then well underway on three dioramas, two mural maps, a set of four large paintings, and several smaller illustrations.[32]

The diorama probably started first had as its cannily chosen subject General Washington welcoming Lafayette on the steps of the Ford House in Morristown. This scene for the Park Service alcove well illustrated the nature of the new historical parks. The proximity of the Ford House to the laboratory simplified the task of copying intricate architectural details, with consequent cost savings. The laboratory could save more money by reusing the molds and data to duplicate the group, with only minor changes, for the Morristown museum. Burns would later cut costs on two more park museum dioramas by modified reproduction of others in the Interior Museum.

In the next few months Burns hired five more excellent preparators. Herman Van Cott and Lee Warthen were mature artists, talented and free from temperamental eccentricities, who painted historically accurate illustrations to carry exhibit narratives. Arthur A. Jansson worked on diorama backgrounds to a large extent. Rudolf W. Bauss and Frank G. Urban came as skilled model makers, Bauss having served a full apprenticeship as a wood carver on fine furniture in Germany. Burns also had on the payroll William H. Jackson, Civil War veteran, pioneer photographer, bullwhacker, and artist. Then in his early nineties, Jackson worked in his own New York studio. He painted several pictures for the Interior Museum, but his unique contribution consisted of costume sketches and notes for a diorama depicting the 1870 Yellowstone campfire where the national park idea traditionally originated. Because Jackson himself had camped in Yellowstone as a member of the 1871 Hayden Expedition, his advice lent considerable authenticity to the details.[33]

To support the work of the preparators the laboratory relied for curatorial services on John Ewers, Alden Stevens, Robert Starrett, Paul Hudson, Ralph Lewis, and Stuart Cuthbertson, the latter a former historical

technician at Vicksburg. They had to finish exhibit plans for the remaining bureaus and provide the voluminous information on which production of the illustrations, maps, models, and other graphic devices depended. One curator stationed at Morristown supplied a flow of such data from sources in the New York area and checked the accuracy of what the artists produced. Others in Washington gathered from the bureaus specimens, photographs, and all the facts and figures the exhibits would present.

In the spring of 1936 Burns transferred from Morristown to Washington. He was chief curator of the Interior Museum until August, when he became acting chief of the Museum Division. The change brought wider responsibilities with less opportunity to concentrate on Interior Museum matters. The Morristown laboratory was left in charge of Arthur Jansson, who was not well equipped for the role. Production nevertheless continued without apparent loss of quality until Burns resumed personal oversight. This came about when the laboratory moved to the second and third floors of the Ford's Theatre building in Washington, over the Lincoln Museum, that fall. The new location enabled Burns to maintain the Museum Division office in the Interior Building and spend time almost daily at the laboratory.

Two preparators left the Service rather than transfer to Washington. Wilfrid Bronson resumed writing and illustrating books at his Hudson Valley studio. Lynn A. Royal, a model maker from the University of Rochester museum, probably returned to that city. The six per diem employees could not follow the laboratory. The group that did go suffered some gradual erosion as individual preparators found positions in other government offices that seemed more permanent than a PWA project. Burns hired a few temporary replacements as needed, and at Secretary Ickes's request he employed Harry L. Raul, a quiet, middle-aged, pipe-smoking artist, as a diorama sculptor.

Exhibit preparation more than kept pace with construction of the new Interior Building. The contractor began finish work on the museum wing in March 1937. By July the laboratory started to install the dioramas. A strike by the contractor's painters delayed progress, as did difficulties encountered by the case manufacturer. The Interior Museum finally opened to the public on March 9, 1938, under Park Service operation. It received favorable comment and began attracting some 10,000 visitors per month. Paul Hudson, designated acting curator, set it on an active course with support from the laboratory. The exhibits underwent the minor modifications that normally follow a new installation, and the laboratory made a few changes to update information—a service the museum would continually require but seldom receive.

Hudson organized collection storage and records and worked especially to develop use of the museum. He opened it Sunday afternoons, publicized it, prepared a mimeographed leaflet, arranged temporary displays,

scheduled school visits, and attracted out-of-town visitors. This promising start faltered when the PWA funds for the museum finally ran out. After only four months Hudson had to be transferred to funding for a park museum project. He divided his attention to some extent between his old and new assignments to keep the Interior Museum functioning.[34]

The museum ceased to be a responsibility of the Museum Division or the Park Service on April 1, 1939. Secretary Ickes reassigned its operation to his office and made Harry Raul the curator. Although Raul lacked curatorial training or experience, the absence of adequate funding probably bore equal blame for what ensued. Interior's bureaus, chronically hard-pressed for program support, failed to provide money to keep their exhibits up-to-date. The exhibits were of high quality and durability, but much of their content soon lost relevance. The Interior Museum entered a long period of stagnation.

Eastern Park Museum Projects to 1942

The PWA museum projects for eastern parks came to a standstill when the money ran out at the end of July 1935. Six months of uncertainty followed before the efforts of Associate Director Demaray succeeded in securing a new allotment. This hiatus did not lessen Carl Russell's commitment to the program nor persuade him to lower his standards. In late August he started out to survey museum needs at Acadia National Park, but Ansel Hall's unexpected arrival in Washington cut short the trip. Hall came eager to justify a large WPA project, a scheme Russell considered "half-baked" because the low salaries would not provide employees adequately skilled to prepare exhibits of the quality he envisioned. They discussed the proposal for a museum division in Washington, as yet unapproved, which Hall appeared to accept.[35] In October Russell moved his family from Berkeley to Washington in anticipation of the division's establishment, which came in December.

Authorization of PWA funding for what seemed at least another year came in mid-January 1936. The Museum Division received $126,500. Eastern projects got $73,500 and the West $53,000. Russell proposed spending less than half the eastern share on the museums in the newly constructed PWA buildings. He did not expect to complete all of them but hoped to make them functional. Hot Springs, with an administration/museum building in the 1935-36 PWA program, would soon require exhibit funds. At Fort McHenry the temporary installation of the Bowie arms collection required replacement, and Colonial National Monument was in the midst of local museum development that needed more professional support. Most of the remaining money was earmarked for smaller projects at Antietam, George Washington Birthplace, and Mammoth Cave. Russell

included a larger sum for museum planning at Acadia, a new project for which no building had yet been programmed.[36]

Even this injection of money did not assure stability. On the same day as the PWA authorization, Russell had to confer with Conrad Wirth about how many positions the museum program might lose from a threatened curtailment of ECW funds. In March continuance of the Fort Hunt laboratory and Hall's vital ECW staff demanded strong justification in the face of the anticipated cuts. In May it was PWA money that seemed shaky, and Russell appealed to Wirth for help against the prospect of "total failure of PWA support to be suffered by the Museum Division in July."[37] Such recurrent crises, even though usually averted, entailed disturbing shifts in personnel that would plague the division until World War II brought an end to the Depression-generated emergency programs on which it largely depended.

Under the circumstances the division reluctantly undertook peripheral projects to bring in extra funds. These included exhibits for numerous conferences and expositions ordinarily assigned to the Fort Hunt laboratory or to Berkeley. The division lent the services of Alden Stevens for a month on a reimbursable basis to coordinate exhibits at the 1936 Wildlife Conference. John Ewers apparently served in a similar capacity for CCC exhibits at the Texas Centennial Exposition in Dallas. A source of extra money closer to Russell's interests came from Wirth's state park program. ECW development of state parks, a Park Service function at the time, involved establishing museums in parks where these seemed appropriate. Wirth turned to the Museum Division for exhibit planning and preparation and occasionally for special curatorial services, work that the laboratories welcomed.

The immediate concern in January 1936, however, was to reactivate the PWA program. Action proceeded on two fronts. At Morristown Burns found it possible to assign the preparation of illustrations, models, and labels for the Vicksburg museum along with work on the Interior Museum exhibits. The presence of John Ewers, who was familiar with both sets of plans, as curator made it practicable to combine the jobs. In Washington, where the curatorial staff drafting plans for the Interior project had largely dispersed, Russell set up a small planning and preparation unit in the Bond Building at 14th Street and New York Avenue northwest, where the Branch of Plans and Design occupied rented space. Kenneth Disher supervised the operation although working much of his time in the division office at Interior.

For most of its existence the Bond Building group consisted of two artists and a curator. The artists, hired locally, did not match in skill those Burns was assembling at Morristown but produced usable work. Both had emigrated from Europe after World War I. Marcel Colin, a dapper

Frenchman who had been a teenager when the war ended, clashed ideologically with Frank Imrey, a veteran of the Austro-Hungarian Imperial Army. Imrey brought a background of colorful adventure, having been captured by the Russians and escaped across Siberia and China. This may have helped to make his preliminary sketches lively and convincing, characteristics that eluded the finished illustrations. He worked particularly on exhibits for the Hot Springs museum. Ralph Lewis collaborated with them as curator for a few months, continuing preparation of the Hot Springs exhibit plan and one for the Interior Museum alcove assigned to Territories and Island Possessions. When Burns moved his laboratory to the Ford's Theatre building, it absorbed the Bond Building unit. Imrey remained with the laboratory for a time while Colin was sent to help with exhibit preparation at Colonial.

Carl Russell did not carry through the opportunities provided by the new PWA allotment. His primary focus on museum work came to an end following a tragic event on February 25, 1936: George M. Wright, chief of the Service's Wildlife Division, and Roger W. Toll, superintendent of Yellowstone, died in a traffic accident while traveling together on official business in New Mexico. Wright had been assistant park naturalist at Yosemite under Russell, and the two men remained close friends. When Wright proposed a program of wildlife research in the parks as a basis for better management, Russell supported him strongly and argued his cause in Washington. Finally the Service established a wildlife division in the director's office with Wright in charge. Russell's early association with its program and his doctorate based on park wildlife research made him a natural choice to carry on the work after Wright's death.

Russell recommended Fritioff Fryxell to succeed him when he took over the Wildlife Division on August 16. When Fryxell proved unavailable, Ned Burns became head of the Park Service museum program, a position he would hold with distinction for the rest of his life. Because Burns lacked civil service status, his title was acting chief of the Museum Division until the position became permanent in 1939.[38]

The change of command did not lessen Russell's professional interest in museums. While his transfer to the Wildlife Division was in progress, the Carl Schurz Memorial Foundation selected him for a three-month study tour of European museums. Characteristically he brought home stacks of museum publications, which he carefully organized, filed, and made accessible to Park Service museum staff. He picked up his wildlife functions as soon as the tour ended, but another contingency gave him less than a year in the post. On August 1, 1937, the Service regionalized its operations, and he moved to Richmond, Virginia, to direct Region One, covering parks in the eastern states. Little more than a year later Harold Bryant became superintendent of Grand Canyon National Park, and Russell

returned to Washington to succeed him as supervisor of research and information. Overseeing the Museum, Naturalist, and Wildlife divisions, he gave strong support to the museum program without circumscribing Burns, who had earned his full confidence.[39]

Burns faced many of the difficulties as Museum Division chief that Russell had before him. Bryant, his initial supervisor, was still restrained in his advocacy of park museums. Chief Naturalist Trager's generally critical and uncooperative stance toward the museum program probably became more so when creation of the Museum Division took away his control of the Fort Hunt laboratory. Verne Chatelain took the educational aspects of the historical parks with him when he succeeded in having historical activities removed from the Branch of Research and Education to a separate and equal Branch of Historic Sites and Buildings. Consequently the Museum Division continued to have two masters who did not see eye to eye, both now assistant directors. Although Chatelain resigned in 1936, the interbranch relationships changed little under his acting successor, Branch Spalding. Within the division Burns inherited the problem of supervising to a degree his distant and unwilling colleague, Ansel Hall, whose budget and program fell within his purview.

A series of personnel changes soon placed the Museum Division in a much more cooperative environment. Early in 1937 Hall decided to leave Park Service employment and assume management of the principal concession at Mesa Verde. His successor was Dorr Yeager, who had worked closely with Russell on museums at Yellowstone and Rocky Mountain and had moved into Russell's position on Hall's Berkeley staff. Yeager's new title, assistant chief of the Museum Division, and the subsequent renaming of the Field Division of Education as the Western Museum Laboratories signaled the warm collaboration that ensued. Russell's transfer and promotion in 1938 to head the Branch of Research and Information assured museums strong support on the director's staff. Earlier that year Ronald F. Lee became supervisor of the Historical Branch. He moved quickly to advance cooperation between his branch and Russell's, particularly in regard to museum work. As one effective means he arranged a series of round-table discussions among their staffs to address common professional concerns, such as the role of objects in historical research and interpretation. Earl Trager remained as chief of the Naturalist Division until his resignation in the summer of 1940 to become manager of Bell & Howell's Washington branch. Good cooperation between the Museum and Naturalist divisions preceded this, thanks especially to Trager's able assistant chief, Howard E. Rothrock. It continued under the new chief naturalist, John E. Doerr, Jr.

Burns did not wait for these fortuitous occurrences before pushing ahead on the PWA projects. PWA funds had provided administra-

tion/museum buildings for seven eastern parks. The ones at Chickamauga-Chattanooga, Guilford Courthouse, Shiloh, and Vicksburg as well as two more added under the 1935-36 program, Fredericksburg and Hot Springs, stood waiting for their exhibits when Burns took command. Construction of the Morristown museum, which would also house the park offices, neared completion. These incipient museums required much more exhibit preparation than the new allotment could cover. Making the best of the situation, he used the existing laboratory staffs to turn out as much good work as possible without jeopardizing progress on the Interior Museum.

Vicksburg National Military Park exhibit, 1937. A typical wall case among the first generation of exhibits planned and produced by the Museum Division.

The Vicksburg museum had its exhibits completed and installed first and opened in February 1937. Hot Springs came next, opening that June. Shiloh followed, but the available funds ran out before the job could be finished. The museum opened in March 1938 with some of the exhibits as planned and the rest temporary installations by the park staff.

Morristown dedicated its new building on Washington's Birthday in 1937 but waited a year to admit visitors to the museum on a regular basis. By then two exhibit rooms each contained a diorama prepared by the Ford's Theatre laboratory and a few choice specimens from the park collection supplemented by temporary displays. These occupied the cases for which permanent exhibits had been planned. The Morristown museum, well endowed by its exceptional building and collection, remained in this interim situation for years. A resident curator kept it viable and reasonably active.

Lack of funds prevented any work on the exhibits planned for Chickamauga-Chattanooga and Guilford Courthouse. Guilford, which got some replanning help from the Museum Division, went ahead locally to install ten temporary exhibits and open in the spring of 1937. The original PWA allotment had not included museum planning funds for Fredericksburg. In the new program the Ford's Theatre and Fort Hunt laboratories collaborated to prepare a striking diorama requested for this museum. Beyond that Superintendent Branch Spalding wanted no professional help from the Museum Division. He rejected the idea of narrative exhibits in favor of "expository" ones. He did not convey clearly the distinction he had in mind, but his staff installed cases of Civil War relics in the typical practice of local history museums.[40]

While Burns could not feel satisfied that only two of the seven planned museums were fully functional, he could be pleased with the quality of workmanship in the exhibits his preparators produced. Contemporary museum practice left the overall design of an exhibit as well as its content to the curator; participation of a trained designer at the planning stage lay well in the future. Burns concerned himself with carrying out the curator's specifications effectively. He made sure that specimens showed to advantage in regard to their condition and mounting. Graphic devices were prominent in most exhibits, and he expected the laboratory artists to produce well-drawn and composed illustrations, basically representational, that expressed clearly the ideas intended. He allowed touches of humor or caricature and probably was not surprised when these occasionally offended a visitor. Maps, charts, models, and sculpture had to meet similar criteria of clarity and skillful execution. To assure the legibility and visual attractiveness of labels he relied on freehand lettering with brush or pen in which Albert McClure, for one, had special skill.

The centralization of exhibit production made such quality standards attainable. It also imposed constraints. The exhibits had to be sturdy to

withstand shipment and not too large to go through the museum doors upon arrival. They also had to be durable, for distance would make routine maintenance or repair by the preparators impractical. Burns therefore insisted on the use of high-quality materials. This involved persuading procurement officials to let him bypass federal supply schedules to buy high-grade artists' pigments and brushes, foreign-made sculptors' tools, and Whatman board.[41] Burns also knew that exhibit animation in almost all its tempting forms required continual maintenance that the parks could rarely provide, so he ruled out motorized or visitor-manipulated devices. Lighting effects dependent on special care in the replacement or precise positioning of lamps were avoided for the same reason. Being made by skilled craftsmen, the exhibits required comparable skill to effect satisfactory repairs, corrections, or minor revisions. The Museum Division therefore discouraged any alteration of exhibits by impatient park staff.[42]

These exhibits represented the state of the art for park museums before World War II. Each exhibit concerned one logical segment of a sequential park story and typically occupied a freestanding case. The case helped greatly to protect the specimens and the numerous graphic devices, often done on illustration board. General opinion held that cases enhanced the displays as well, like frames on pictures. One rarely heard complaints about the glass as a barrier to understanding or appreciation, although reflections might create problems. Park museums employed wall cases by preference, supplemented on occasion by table, aisle, or pedestal cases to meet special needs. A wall case had an enclosed base, polished plate glass front and sides framed in narrow aluminum extrusions, and a solid back of homosote, a dense composition board. The case front opened with a piano hinge along one side to provide access. Monk's cloth, a plain woven fabric, covered the back panel and floor of the case to give a neutral, buff-colored background for the exhibit elements. To avoid the disadvantages of placing lights inside a case, vertical aluminum troughs carrying tubular incandescent lamps were hinged to the frame at either side of the front. The labels, illustrations, maps, and charts executed on individual rectangles of illustration board were usually attached to the case back with gimp tacks or pins from which the heads were clipped. Specimens and models rested on the case floor or were fastened inconspicuously to the back panel.

The naivety of the curators as designers showed in the strict symmetrical layouts. Most exhibits shared a hierarchy of labels with a title at the top, a key label centered below it, often several secondary general or descriptive labels that might be incorporated in illustrations, and brief object labels. The curators had not yet learned the cardinal virtue of brevity in label writing. In the Vicksburg museum verbiage ranged from about 150 to nearly a thousand words per case. Key labels that were expected to be read by nearly every visitor seldom fell below forty words and might

approach 150. Park Service museums would later regard 25 words as a desirable maximum.

While these exhibits were in production, the PWA allotment permitted a limited amount of other museum planning by the curators paid with this money. John Sachse produced the revised plan for the Bowie Collection and plans for other Fort McHenry exhibits noted previously. Stuart Cuthbertson did preliminary studies for an abortive fur trade museum (mentioned later). Ralph Lewis concentrated on plans for museum development at Acadia that also failed to materialize. Concurrently ECW provided two student technicians during the summer of 1936 who completely revised the Guilford Courthouse exhibit plan. One of the students, Paul Hudson, was transferred to the PWA rolls at the end of the season. As a PWA employee he received a curatorial assignment atypical of the centralized museum development pattern.

George Washington Birthplace had asked for the services of a curator. As noted in Chapter One, the park faced uncharted predicaments with a nascent historic house museum in a questionably reconstructed building. At the same time an archeological project at the site was turning up many artifacts and threatening the basic premise of the museum. The Museum Division recognized the need and sent Hudson, who entered on duty as park curator in October 1936. He remained about a year, until the only available funding required his relocation to the Interior Museum project in Washington. During his tenure at the park he apparently had little chance to attack the critical curatorial problems, instead devoting much of his attention to planning and installing a temporary site museum.[43] Building temporary exhibits without skilled help from the preparation laboratory entailed lower display standards and weakened adherence to the priorities and procedures that underlay curatorial policies being set by Burns and his central museum staff.

Curatorial problems of comparable urgency at Colonial National Historical Park led to another atypical, decentralized situation. In this case the park selected a curator and the Museum Division provided PWA funds to pay him. Alfred F. Hopkins, M.D., had been an army doctor in the Philippines and later at the Army Medical Museum in Washington. At heart, however, Dr. Hopkins was an antiquarian and collector. After his military service he engaged in various aspects of the antiques trade, cultivating a broad knowledge of historical objects, their market values, and the practices of the business. He also polished the acquisitive skills traditionally attributed to curators. "I'll come and bring my basket," he would assure well-to-do dowagers. Hopkins worked at the Yorktown section of Colonial from March 1936 to December 1938, then accepted a similar emergency-funded position at Morristown National Historical Park.[44] While at Yorktown he prepared furnishing studies for the Moore House,

advised and perhaps supervised a WPA sewing project that reproduced Revolutionary flags and uniforms for the park, wrote an account of the weapons and equipment of early American soldiers, and proposed a solution to the puzzling markings found on many excavated clay tobacco pipes. His negotiations obtained for Colonial a sizeable gift of firearms and accessories, an example of his talent in acquiring specimens that also demonstrated the need for a park to define clearly the proper scope of its collection.

The $73,500 of PWA money that revived the eastern park museum program early in 1936 sufficed to accomplish the limited objectives laid out for it. Along with the separately funded work on the Interior Museum it enabled the Museum Division to maintain a central professional staff in Washington for about two years, but only through the practice of strict economy. The Ford's Theatre laboratory eked out its funds by collaborating with the ECW-financed Fort Hunt laboratory to prepare museum exhibits for Fort Frederick State Park in Maryland, installed in July 1937.[45] Other savings resulted from PWA payroll reductions. Curators John Ewers and Alden Stevens and preparator Arthur Ohlman transferred to positions in the Berkeley laboratories in 1936 and 1937. Government jobs elsewhere drew off other preparators, particularly to the Interior Department Office of Exhibits established in February 1936. Secretary Ickes intended it to produce "displays and exhibits of various kinds, for expositions, conventions, fairs, and for educational purposes generally, for the Office of the Secretary, and for the several bureaus and divisions of the Department as well."[46] Fortunately for the Park Service museum program, departmental officials tacitly accepted the subtle distinction between museum exhibits and promotional displays and let the museum laboratories continue to operate. The Ford's Theatre laboratory was nevertheless reduced to six preparators by the end of March 1938: Johnson, McClure, Urban, Warthen, Wood, and Raul, the new sculptor who held a civil service appointment.[47]

Another opportunity further diminished the curatorial staff. In 1937 Chauncey Hamlin secured a $50,000 grant from the Rockefeller Foundation to establish a museum training internship program at the Buffalo Museum of Science. Two Museum Division curators promptly applied, even though their temporary status as federal employees would require them to vacate their jobs with no assurance of reinstatement. Thanks no doubt to Hamlin's interest in park museums, both were accepted in the first group of five interns. Robert Starrett and Ralph Lewis reported to the Buffalo Museum in October 1937 for a year of rigorous training under its director, Carlos Cummings. The experience covered all phases of the museum's operation and involved study trips to numerous other museums in the East and Midwest on the pattern Hermon Bumpus had prescribed earlier for Carl Russell. Hands-on practice in exhibit installation under a mentor who was hard to satisfy helped implant high standards. Many hours of observing and

associating with museum users provided an appreciation of their needs and interests impossible to acquire in the isolation of a central laboratory serving a distant clientele. At the end of the year Starrett reported to the Jefferson National Expansion Memorial in St. Louis as curator while Lewis returned to the Museum Division in Washington.[48]

Their chance for reemployment rested on a new project. When exhaustion of the $73,500 PWA allotment and the imminent completion of the Interior Museum project threatened to end support for the eastern museum development program, Secretary Ickes's Advisory Board on National Parks, Historic Sites, Buildings, and Monuments backed a proposal to allocate to the Museum Division $100,000 of the multimillion-dollar Depression relief funding for the Jefferson National Expansion Memorial. Ickes authorized this action in January 1938 "for the preparation of illustrative material concerning the project."[49]

Substantive planning for the memorial had not progressed beyond that necessary to acquire the real estate and clear the site, and estimates indicated that these steps would take most if not all the money so far available. The staff of the incipient park understandably regarded the diversion of even this small fraction of its funding as premature. It seemed equally premature to the Museum Division from the standpoint of performing work useful to the memorial. No one had a clear idea of the form the memorial would take. Even the historical parameters of the memorial theme were undefined. The park had no space suitable for an interim museum. Nevertheless, the division grasped the lifeline and concentrated largely on this project until interrupted by World War II.

Starrett reported directly from his internship at Buffalo and remained until March 1941, when a civil service position as assistant park naturalist at Boulder Dam offered more security. At St. Louis he worked a jump ahead of the demolition crews to salvage representative objects abandoned in the 482 buildings that occupied the memorial area, most of them commercial and industrial structures dating from the late 19th century. He chose furniture, furnishings, equipment, tools, records, and other items that would illustrate the working environment and business activities of the former occupants. Marking and recording each specimen, he stored them in a small factory building on the site that the park planned to retain temporarily as a warehouse. He also collaborated with the park architects in collecting, recording, and storing significant building fragments. The salvaged materials formed the core of an unusual museum collection.

As a second direction of attack, the Ford's Theatre laboratory prepared sample exhibits to show how museum development could serve the purposes of the memorial. On the premise that an eventual museum would tell visitors the story of westward expansion, the exhibits dealt with subjects clearly significant to this broad aspect of national history. The samples also

aimed to illustrate a variety of display methods, show their interpretive effectiveness, and establish quality standards. A few were scale models of exhibits that might be constructed, but most were built to the size intended for use. Their construction required most of the time and talents of the preparators until the spring of 1941. Included were five dioramas, a mural map, a diagrammatic map display, scale models of a French colonial house and two Mississippi riverboats, a detailed model for an exhibit on the evolution of the American ax, and a working model for an animated unit. Preparing these sample exhibits required substantial curatorial support in the form of detailed studies for each new diorama, map, and model.

The Museum Division's third approach to its Jefferson National Expansion Memorial assignment consisted of drafting a museum plan. Considering that the memorial had not yet defined its goals and had barely begun a professional analysis of the history implied in its name, a plan for museum development would necessarily be tentative. On the other hand, two concrete museum proposals already on record underlined the importance of timely action before the park found itself committed to tangential interests. No sooner had the Park Service become involved in the memorial than Carl Russell saw it as an opportunity to realize his dream of a fur trade museum. The historic site at St. Louis had been home base for the Rocky Mountain fur traders, and an early fur warehouse still stood within its boundaries. His quick response in the form of a prospectus and tentative exhibit plan called for a building to contain a million cubic feet of museum space. Charles Peterson, assigned to the memorial as architect, saw it through different eyes. To him the site invited the creation of a museum of American architecture, which he lost no time in promoting.[50]

The Museum Division, when it entered the arena nearly two years later, believed that the memorial would need a museum presenting a balanced interpretation of westward expansion evaluated in terms of national significance. Fur trade and architecture should have a place in it, but only to the extent their relative importance warranted. Because the museum would serve a national traveling audience, it would need to be small enough to comprehend in a single visit. The Branch of History under Ronald Lee shared these views, but the vast scope of the memorial led relentlessly to bigger plans. The Museum Division settled at this stage on the idea of a museum with a summary nucleus of some 58 exhibits supplemented by larger halls developing each major theme in more detail.

The available curators began by compiling a series of theme studies. John Ewers, who had returned from Berkeley, undertook a solid review of the role of the Indian in national expansion. Paul Hudson studied the effects of the natural environment on the westward movement. Ralph Lewis considered how agriculture fitted into the advancing frontier. Russell had already requested that Stuart Cuthbertson prepare an extensive bibliography

on the fur trade, which Ewers helped finish. By the end of 1938 Thomas Pitkin, the park's able historian, provided an outline of subject matter within the tentative scope of the memorial. With this as a guide, studies, preliminary plans, and comments flowed back and forth between the curators in Washington and Pitkin and Starrett in St. Louis. Proposals became progressively more detailed and specific, culminating in a voluminous report on the proposed museum of national expansion completed in July 1941.[51] For promotional display the laboratory built a large model of the museum. It included architectural details without benefit of input from the architects, who justifiably took a dim view of it. Shipped to the park with the sample exhibits, it received scant use.

While its somewhat premature involvement with the Jefferson National Expansion Memorial largely sustained the division's eastern operations from 1938 through 1941, several other projects demanded attention. Two eastern parks received emergency relief funding for new administration/museum buildings. At Ocmulgee National Monument large-scale archeological investigations revealed that the Macon, Georgia, area had been occupied continually by humans for several thousand years. The findings justified a site museum that the park archeologists hoped might become a central repository and research center for the prehistory of the southeastern states. In June 1939 the Service sent Ewers as acting superintendent to Ocmulgee, where he spent a year laying curatorial foundations and collaborating on plans for the proposed museum. Meanwhile the museum laboratory in Washington produced a scale model of the building.[52] Further development was postponed by the war.

Kings Mountain National Military Park, one of the areas transferred from the War Department in 1933, required a smaller facility. Exhibit preparation for this museum began in May 1940 after a three-month stint of planning. Because the preparators remaining on the Ford's Theatre laboratory staff had their hands full with the St. Louis project, the division employed three additional artists for the job. Richard A. Flesch worked at the laboratory as a diorama sculptor until November. Frank E. Buffmire and Ruth B. Degges were hired in August and continued until funds ran out the following February. Lack of space at the laboratory forced them to do their painting and modeling in an unoccupied residence at Fort Hunt, but they succeeded in nearly completing the exhibits. Delays at the park in getting electrical power to the new building postponed installation until June 1942.[53]

One feature of these exhibits engaged the division in some extracurricular activities. Patrick Ferguson, the British commander at Kings Mountain, had invented a breechloading rifle that proved too advanced for official acceptance. Carl Russell's foresight led the Service to purchase one of these rare weapons before the Kings Mountain project developed. While the

gun was at the laboratory to be incorporated in the new exhibits, Alfred Hopkins asked permission to test-fire it. To gauge the proper powder charge he and an interested friend from the National Rifle Association staff first fired it across the width of the Ford's Theatre building. When the ball buried itself deeply in the brick of the far wall after passing through a sandbag backed with planks, they transferred their experiments from the third floor to the basement. This gave them a longer as well as safer range for firing from a bench rest at a standard target.[54] Success in these trials led to a field test intended for interpretive use. John Doerr, chief of the Natural History Division, donned a reproduced British uniform borrowed from Colonial and advanced across an open field loading and firing as he went. Still and motion pictures recorded the event in detail.

Several other parks at this time had museum projects that involved the Museum Division to some extent. The Ford's Theatre laboratory produced a set of temporary exhibits for the new Ochs Memorial, a donated observation station museum on Lookout Mountain in Chickamauga and Chattanooga National Military Park. Curators on the eastern staff started museum planning for an administration/museum building at Manassas National Battlefield Park, but the approaching war postponed any work on the exhibits. They also helped plan exhibits for a western project, the new geology/paleontology wing of the Scotts Bluff museum.[55]

It looked for a moment as though the division would undertake a larger western job. Glacier National Park, which had been anticipating a major allotment of PWA museum money since the beginning of the emergency relief program, finally heard that $150,000 would become available for an Indian museum. A model for a suitably rustic building was quickly produced and George C. Ruhle, the park naturalist, arrived in Washington to discuss plans. A conference with Secretary Ickes punctured the balloon. Ickes directed that the museum be erected outside the park at Browning, Montana, on the Blackfeet Reservation.[56] The allotment went to the Bureau of Indian Affairs rather than the Park Service. In January 1941 that bureau borrowed and retained John Ewers to oversee the project. Under his directorship the Plains Indian Museum succeeded not only in its exhibits, a small part of which were prepared by the Ford's Theatre laboratory under contract, but also in active crafts and research programs. It undoubtedly broke ground for the widespread development of Native American museums a generation later.

During this period as well the division accomplished two valuable tasks beyond those for which it had received funding. One of them fulfilled a need originally voiced at the First Park Naturalists' Conference in 1929. The need had grown more critical by February 1937 when Dorr Yeager informed Ned Burns of a project he had started. At his direction Alden Stevens was drafting a museum manual. Burns replied immediately: "As

you know, Dr. Russell and I have long been concerned with the need of a museum manual for National Park Service workers. Considerable work has been done on such a manual by various ones of the Museum Division staff but pressure of more immediate problems has made it impossible to complete the work." This letter shifted responsibility to Washington, although Yeager and Stevens went ahead to assemble for use in the Western Laboratories a "Book of Museum Procedure" in loose-leaf, typewritten format containing largely technical advice culled from published sources.[57]

The Park Service museum program clearly suffered from the lack of an authoritative reference that defined acceptable policies and procedures and instructed staff in the proper maintenance and operation of museums. Most park museums were too small to require the full time of a trained curator. Running the museum fell traditionally to the park naturalist or historian, who was hardly prepared to do so at a professional standard. A good manual would provide the necessary curatorial guidance to these busy interpreters. Russell and Burns continued to gather material and notes toward that end.

Sometime past the middle of the 1940 fiscal year the Museum Division secured money to publish the proposed manual—but not to prepare it. Russell and Burns had their ideas and notes but had not started to write the text. Suddenly they had a matter of weeks in which to submit the completed manuscript. With a June 30 deadline they had the Museum Division drop almost all other work. The curators, typists, and some of the preparators joined the crash program spending their workdays, evenings, and weekends writing and editing drafts, assembling and preparing illustrations, running down references, typing, and retyping. Burns, whose deep practical knowledge of museology was essential to the venture's success, assigned the individual tasks and checked the results. He personally concentrated on the Technical Methods chapter, the longest and in many ways most important segment. Russell wrote the historical portion of the first chapter, the chapter on park libraries, and the final one on administrative relationships. Individual curators did most of the writing of the remainder with Ralph Lewis editing the bits into a more or less consistent style. Paul Hudson compiled the curatorial bibliography.

In spite of the haste things pulled together. The Park Service editor-in-chief received the finished typescript on June 1, and it went to the Government Printing Office in July. Russell made the wise decision to have it published with Burns' name as author. The 426-page *Field Manual for Museums* appeared in 1941, with copies going to all the parks. The manual served its intended purpose well, although leaving some matters that later became specific instructions to the discretion of park staffs. It also met a much wider need among museum workers outside the Service, selling so briskly that the GPO stock was exhausted by 1943.[58]

The second unprogrammed task also stemmed from the rapid growth in museum work the Park Service was experiencing. The fact that park museums existed in all stages of development made it difficult even to know which ones to count. To obtain a better measure of its responsibilities the Museum Division sent to every park in November 1939 a memorandum of definitions and instructions accompanied by a data card and supplementary questionnaire. The survey results showed that within four years the number of park museums in active operation had grown from 36 to 114. The aggregate exhibit area of these small units exceeded that of the National Museum in Washington, and their 4.2 million visitors that year outnumbered those of any two of the three largest museums in the country.[59] Many parks still relied at least in part on temporary displays because the division could not yet schedule planning or preparation by the central staff. Curatorial work on study collections and museum records had not kept pace. The survey also indicated that furnished historic structure museums, of which the Service now had 38, comprised a significant and largely untouched segment of the problem.

This delineation of the division's growing task came at a time when the capability to deal with it was ebbing. Reductions in the work force accelerated as the national emphasis on war preparations increased. The Fort Hunt laboratory began losing its ECW supervisory artists by 1938. During that summer William Macy, the chief, had only Walter Weber and a student technician to help oversee the CCC enrollees. In October the division received permission to consolidate its two eastern laboratories.[60] The one at Fort Hunt closed. Macy became chief preparator of the Ford's Theatre laboratory and a few enrollees came in each day from their camp. Weber, a well-known wildlife artist, transferred to the Branch of Recreation and Land Planning.

In 1939 Burns obtained civil service status as permanent division chief. The Service also succeeded that year in establishing one civil service position for a preparator. Burns selected Rudolf Bauss, who had proven highly skilled, versatile, and dependable, for the appointment.[61] In 1940 Morristown National Historical Park secured a civil service position for a park museum curator, the first opening of its kind. Paul Hudson entered on duty there that September. Alfred Hopkins, who had held the temporary curatorship at Morristown, transferred to Washington in his place.

Hudson had previously obtained a valuable training experience. Under a gift from the Carnegie Corporation of New York, the American Association of Museums offered grants-in-aid for foreign travel to 25 museum professionals in the United States and Canada. Hudson was among those chosen and spent two months traveling to French, German, and British museums on the brink of World War II. During the summer of 1940 Rosario Fiore returned to the laboratory staff to model the figures for the

last St. Louis diorama, but Albert McClure accepted a civil service appointment with the Bureau of Reclamation in Denver. Six WPA library project workers assigned to the laboratory from mid-summer 1940 until April 1941 added material to a picture morgue intended for convenient reference by the preparators.[62]

The pace of change quickened in 1941. As the Jefferson National Expansion Memorial allotment ran low, it became necessary to furlough employees for lack of funds. Preparators Johnson and Wood left at the end of February. Fiore transferred to another agency in March, and Warthen's furlough began in April. By the end of April the eastern preparation staff consisted only of Bauss, Macy, and five or six CCC enrollees. The curatorial staff had to go also. In March Starrett left the St. Louis project to become assistant park naturalist at what is now Lake Mead National Recreation Area. Hopkins went on furlough in April. Lewis continued on duty to tie up loose ends of the St. Louis museum planning project and mind the division office until Burns returned from his inspection of western park museum matters. July brought an ECW cut that forced the termination of Maxwell Fulcher's clerical position. When Burns got back to Washington in late August, Lewis departed after having been on leave-without-pay status for part of the month, leaving the division chief with no office staff.

Macy transferred to the Navy Department in February 1942. That July lack of regularly appropriated funds required Bauss to go on the St. Louis payroll although remaining headquartered at the Ford's Theatre building. The eastern laboratory ceased to exist when the Office of Strategic Services took over the space and equipment in the building to make flexible relief maps for military use and Bauss became museum specialist for National Capital Parks, a position he filled ably for the rest of his life.[63] Transfer of the Museum Division office in October to Chicago, where Park Service administration was centered for the duration, reduced it to its minimum wartime level.

A reprieve allowed one more park museum to open. Park Service acquisition of the Old St. Louis Courthouse by gift in 1940 added the historic but dilapidated structure to the Jefferson National Expansion Memorial. With rehabilitation, the building would provide ample space for the memorial's offices and for a temporary museum containing the sample exhibits the Museum Division had prepared. For the latter, the Service received WPA approval in September 1941 to sponsor work by the St. Louis County unit of the WPA Missouri Art Project.

Burns acted promptly to recall needed staff. Lewis reentered on duty September 15 and went at once to St. Louis to oversee preparation of the museum space and installation of the exhibits. Lee Warthen returned to the Ford's Theatre laboratory in October to help Bauss and Macy pack the exhibits for shipment, remaining until he transferred to the Navy Depart-

ment at year's end. Hopkins, also recalled in October, worked on fur trade questions and other curatorial research in Washington until sent to help install the exhibits. David Rodnick, a social anthropologist from the Branch of Historic Sites, went to St. Louis as an additional curator. The sample exhibits left Washington via railway freight in February 1942, followed by Burns and Bauss in March to unpack them and set the dioramas in place. The local WPA workers spent several months constructing furred wall and exhibit cases while the curators assembled specimens, prepared label copy, and undertook the final installation.[64]

The interim Museum of National Expansion opened in October. It contained only about thirty exhibits but provided a base for the memorial's wartime interpretive program. It also represented a distinct transition in Park Service display methods. Gone were most of the monk's cloth backgrounds, free-standing cases, and illustrations drawn or painted in the museum laboratories. Newfangled fluorescent lamps illuminated the brightly painted interiors of the built-in cases. Cutout cardboard letters formed many of the captions. Specimens supplemented by photographs or photostats of old documents dominated most of the exhibits.[65] The installation foreshadowed postwar changes.

The Museum Division Program in the West to 1942

When Carl Russell left Berkeley in January 1935 to initiate systematic museum development for eastern parks, the Field Division of Education already had a large operation underway. Its rapid expansion (described at the end of Chapter Two) led to obvious differences between the western and eastern programs, but the two had basic similarities. The ECW/CCC component of the Berkeley organization paralleled generally the Fort Hunt laboratory in the East. Both were funded by the same emergency relief agency and specialized in producing topographic models. They differed principally in the role of the ECW technicians. Those at Fort Hunt were all artists. They concentrated on training the CCC enrollees in model making skills, overseeing their work, and supplementing it as necessary. The Field Division employed a slightly larger number of ECW technicians, including men with curatorial, architectural, and academic experience whom Ansel Hall considered the backbone of his staff. He used them to prepare museum development plans and exhibit plans in the field, to carry out research for exhibit content, and to perform broad supervisory functions in the exhibit laboratories.[66]

East and West also relied in similar ways on PWA funding. In fact PWA supplied the primary focus of museum work for both western and eastern parks from the start of New Deal emergency relief in 1933 through 1937. In 1933 and 1934, as noted previously, PWA allotted money to

construct museums in parks but failed to provide for their contents. Five of these projects were in western parks: administration/museum buildings for Aztec Ruins, Devils Tower, and Scotts Bluff national monuments, an extension of the Mesa Verde Museum, and conversion of Moraine Park Lodge in Rocky Mountain National Park to a museum. While exhibit development for the eastern PWA museums had to wait for funding, Hall could set his ECW and CWA employees to work on these projects at once. ECW technicians and selected CWA workers pushed ahead with the planning and research during 1934 and CWA artists began exhibit preparation. The termination of CWA early that year slowed progress but a fresh host of SERA recipients, although less versatile, allowed some preparation to continue.

At the end of 1934 a reprogramming of $65,000 in PWA funds permitted exhibit planning and preparation for the eastern projects to start under Russell in Washington. A portion of this money, $15,100 for the five western projects, went to Berkeley. Hall used much of it to hire a staff of about eight preparators, a curator, and clerical help. This group corresponded in composition and funding to the Morristown laboratory, which was being established about the same time. The western PWA preparators concentrated first on exhibits for the Moraine Park museum but also started some for Aztec Ruins and Scotts Bluff.[67]

As in the East, this first allotment proved woefully inadequate to complete the projects. Hall therefore went to Washington in August 1935 in search of additional funding. He arrived just as the Service prepared to ask for a second reprogramming of PWA money to continue the work of "equipping" park museums. In collaboration with Russell, he drafted a proposal that included not only the PWA-funded buildings but also museum projects in nine additional western parks. The latter entailed upgrading older exhibits, replacing temporary ones, adding individual displays, and outfitting space converted to museum use. Four months later, as noted above, PWA approved the allocation of $53,000 to do what he had proposed. This was barely half his estimate of what the jobs would cost. He tried to drop some of the projects from the program, but too late.[68]

The PWA preparators, assisted substantially by WPA and CCC workers, produced and installed many creditable exhibits but could not hope to accomplish the whole program. When Russell summarized results in mid-1940, he listed the little museum at Devils Tower as complete. He did the same for the installations at Moraine Park and Mesa Verde, thanks in part to significant help from the talented park staff at the latter. The Aztec Ruins museum still required more exhibits. Scotts Bluff also remained unfinished because a wing for paleontology had been added. The PWA staff was largely responsible for the museum installation at Jenny Lake in Grand Teton and for helping Yosemite and Petrified Forest replace

or expand their exhibits.[69] Most of the preparators supported by the $53,000 allocation remained on the payroll until October 1937. After that the western laboratories did not have a PWA staff as such but continued to have important PWA work to do.

In the 1937 fiscal year Public Works allotted $50,000 to the Park Service for an administration/museum building at Tumacacori National Monument. After a brief altercation between Burns and Hall, the exhibit planning and preparation responsibility came to rest at Berkeley. PWA curator Russell Hastings and Captain D. W. Page prepared the exhibit plan, approved by the director in January but considerably modified as research and preparation continued. The exhibits included three dioramas that engaged the skillful hands of Bartlett Frost as sculptor. One group, depicting a service in the mission church, was enhanced by appropriate recorded music and a touch of animation that made the altar candles appear lighted. The combined effect moved some devout visitors to join the miniature worshipers in kneeling before the altar. Collaboration between the architects and museum planners led to an arched window in the museum framing a striking view of the mission. The introductory display, an electric map tracing Spanish missionary journeys, was less successful. After a WPA craftsman struggled with it for about three years, it finally went to the park with a thick maintenance and operation manual. As Burns doubtless feared, it failed to work satisfactorily.

The 1940 PWA program included two more museums for western parks. Before the impending war stopped production, the Painted Desert museum at Petrified Forest received most of its exhibits but the Walnut Canyon museum got only empty cases. Park interpreters filled them with "temporary" exhibits before the central staff could return to the task after the war. The tendency of such exhibits to become permanent led to more stringent restrictions against local initiative in exhibit installations, for lowered standards in one park undermined the stature of park museums generally.

Although the succession of western PWA projects matched eastern ones, two aspects of the western program had little counterpart in the East. One involved the Works Progress Administration.

Hall's trip to Washington in mid-1935 sought more than the continuation and expansion of his PWA projects. SERA help to the Field Division of Education in the form of about 150 workers was scheduled to end. He had already submitted a comparable proposal for assistance from WPA, a new relief agency. Although Russell wanted none of this low-paid, largely unspecialized manpower for the eastern laboratory, he went along with the idea for the West and for a possible backup if the PWA request failed. Hall did get approval for WPA projects to continue at approximately the same level as the varied tasks SERA had done. The WPA work force seems to

have averaged about 160 through 1939, falling to about 130 in 1940 and 95 in 1941 until the projects terminated that July.[70]

WPA dominated the western museum production program for five and a half years. Most of the workers, like their SERA predecessors, lacked the skills required for specialized exhibit preparation, but their supervisors could direct them in constructing cases and fittings and in supplementing the more creative work of the PWA preparators in other ways. Much of the WPA effort aimed to supply things the western park naturalists needed besides museum exhibits.

With this busy and rather complex program in full swing, Ansel Hall left the Park Service in April 1937. Dorr Yeager, Russell's successor as Hall's assistant, took over as assistant chief of the Museum Division, and the Field Division of Education became the Western Museum Laboratories.[71]

Hall's resignation gave Yeager responsibility for five WPA projects, three of them in-house. A Federal Art Project employed 17 people, most of them photographers or artists on relief. Although they doubtless contributed to the preparation of exhibit graphics, their principal product was lantern slides for illustrating lectures in the parks. The project staff colored hundreds of the slides by hand. In July 1937 this group became part of the much larger Museum Project, whose workers included carpenters, a variety of other craftsmen, and numerous support personnel. They built cases, worked on exhibit elements, and also produced most of the miscellaneous products that the Western Laboratories supplied to parks. The third WPA project concentrated on compiling an annotated bibliography of the western parks. It picked up the task begun earlier by CWA in July 1936 and during most of 1937 employed around fifty people, although the number swelled to 103 in May. The project continued at a reduced level until August 1938, then merged into the Museum Project. By that time it had gathered, typed, and filed 63,656 entries. The first thick volume of the bibliography was mimeographed and bound in 1941. The second volume, still incomplete for some parks, was sent to Washington for mimeographing and temporary binding in paper covers.[72]

The other two WPA projects under Yeager's care worked at a distance. The Southwest Museum in Los Angeles hosted a Federal Art Project until mid-1937. Operating under the immediate supervision of Mark R. Harrington, a leading anthropologist and official of the museum who served in this instance as a Park Service consultant, it had up to 27 selected WPA employees. They produced Indian dioramas for Yosemite and Glacier, illustrations and models for Tumacacori, and a series of accurately costumed miniature figures representing western Indian tribes intended primarily for reference. The Southwest Museum received photographic work from the project in return. As a separate Federal Art Project in San

Western Museum Laboratories, 1937. Dorr G. Yeager (left) views the mass diorama for Tumacacori National Monument with Secretary of Agriculture Henry A. Wallace.

Diego, a WPA photographer assisted by a few National Youth Administration employees supplied the Berkeley laboratories with annotated reference photographs of historic objects accessible in the San Diego vicinity. The Service ended its sponsorship of this project in mid-1937 also. The merger of the museum and bibliography projects a year later left Yeager with only one large WPA project, but by then he had a somewhat comparable NYA project as well. The number of its young workers in training fluctuated monthly from a maximum of 81 in May 1938 down to four in June 1940, when the project terminated.[73]

Instability in the size of the work force was only one of the factors that made running the Western Museum Laboratories a challenging assignment. After WPA tightened its regulations in 1939 to prevent keeping individuals on project rolls longer than 18 months, the Museum Project lost 81 of its most experienced workers and had to accept untrained replacements. In March 1939 a rent increase forced the laboratories to vacate the building housing the largest unit. New quarters were found in neighboring Emeryville, but a disagreement over the lease kept the workers without heat or electricity until May. Two years later "defense training projects" drained off more of the best WPA help, and July 1941 witnessed the end of the Museum Project. In spite of the headaches inherent in its size and nature, the project and the earlier ones it absorbed served the western museum program well.

To obtain more efficient production Yeager integrated his diverse WPA, NYA, PWA, and ECW/CCC staffs into specialized departments. The

Art Department prepared illustrations, maps, models, dioramas, other graphic devices, and lettering for museum exhibits. The artists also drafted layouts for exhibit plans, designed posters, and used their particular skills as needed. The Shop Department did the woodworking and metalworking, casting, and a wide variety of fabrication. It produced exhibit cases, storage cabinets, and other museum furniture and built special equipment for shop use. The Photographic Department, which for a time had five darkrooms in continual operation, turned out negatives and prints by the thousands. It later included the lantern slide assembly line that Yeager transferred from the Art Department. For most of its existence the Bibliography Project operated outside the departmental units. Each department had workers to handle the necessarily bulky paperwork, keep shop and office equipment in repair, and do routine cleaning and maintenance. As demands from the field grew, Yeager added a Miscellaneous Products Department.[74]

One obvious problem with a large force of unselected emergency relief workers was finding productive tasks within their capabilities. Ansel Hall began the practice of offering the parks various services or equipment these workers could supply. Because the relief agencies paid their salaries, this help cost the parks practically nothing, and many took advantage of the opportunity. The Western Museum Laboratories gained a reputation for service that the eastern laboratory with its unavoidable pay-as-you-go policy could not match.

In April 1938 Yeager issued a catalog of available products and services. Its 21 items included specimen storage cabinets for natural history collections, elaborate filing cabinets for lantern slides, nature trail labels, and such services as mounting herbarium specimens, developing and printing films, and framing pictures. A second edition of the catalog the next year added nine items embracing exhibit cases, filing and carrying equipment for the new 2"x2" kodaslides, and more kinds of natural history collecting equipment. Book repairing, map mounting, and a few other services were added in 1941 when the shrinking staff and scarcity of materials eliminated a number of familiar items.[75] For most products parks paid only transportation costs, although they could be charged for materials if these were expensive or their orders large. A fine museum exhibit case might cost a park $62 plus shipping—hundreds of dollars less than from a regular manufacturer.

The abundance of "free" labor also permitted the Western Museum Laboratories to try new processes. They produced a successfully animated representation of the "Pacific Circle of Fire" used in an exhibit for Lassen Volcanic National Park and duplicated for Mount Rainier. Yeager had his shop try fluorescent lighting and silkscreen printing in 1938. Soon park naturalists could order colorful silkscreened posters to announce their programs. In 1939 the laboratories started to produce molded thermoplastic

letters for exhibits. The parks ordered stocks of them to caption their temporary displays. After close consultation with Ned Burns, Yeager and his staff designed an exhibit case tightly constructed of oak with a removable plate glass front. The glass was framed with aluminum extrusions patterned after those used by commercial manufacturers of the best museum cases. WPA workers could build the cases and make them practically as dust-tight as factory-built ones. Difficulties in obtaining the extrusions delayed production until August 1940, but the framing arrived in time for the laboratories to furnish cases for several western park museums at the substantial cost savings noted above.[76]

The large emergency relief operation that made possible such developments did not constitute the only signal difference between the western and eastern programs. Following a practice that Ansel Hall had fostered from the beginning of the Field Educational Headquarters, western park naturalists went frequently to Berkeley on short-term assignment. They no longer did so to build their own exhibits but worked particularly on exhibit plans that the laboratories hoped to carry out for them. They could also help assemble data for the preparators and assure accuracy in content. When Yosemite wanted to add a working model to the geological exhibits in its museum, for example, a member of the naturalist's staff collaborated in Berkeley on its design, construction, and necessary mechanical revision. Such shared experiences developed cooperative relationships that helped both the parks and the laboratories.

In much the same way, Berkeley used outside experts on short assignments to assist with exhibit planning and execution. Francois Matthes of the U.S. Geological Survey spent several months with the Berkeley staff in 1937. Fritioff Fryxell came in to plan museums for Grand Teton, Lassen, and Sequoia. Charles W. Sternberg from the University of Chicago was engaged in the summer of 1939 to work on the exhibit plan for the Scotts Bluff wing. In 1940 Yeager rehired Arthur Woodward as a part-time research collaborator to help with plans for the Painted Desert museum and one at Pipe Springs National Monument.[77]

The Western Museum Laboratories provided the exhibits for a number of park museums in addition to the PWA project museums noted above. To complete the one erected by CCC labor in what is now Guernsey State Park, Wyoming, they designed and prepared an unusually graphic set of exhibits during the last half of 1938. The new museum at White Sands National Monument funded by CCC and WPA became the next priority job. Some of its displays were previewed at the International Petroleum Exposition in Tulsa before being installed at the park in June 1940. Exhibits for the Loomis Memorial Museum at Lassen Volcanic National Park constituted the final big project before WPA funding ended. ECW technician Lorenzo Moffett, the sole remaining preparator, installed most

of them at the park in September 1941. The last project on which CCC enrollees worked before their program ended that summer consisted of models for La Purisima Mission State Historical Park, California. Interspersed with these more urgent assignments the laboratories prepared exhibits for the highly regarded Fall River Pass museum in Rocky Mountain National Park and the Colorado River Station in Grand Canyon, a museum for Bandelier National Monument, and temporary museums at Ohanapecosh and Yakima Park, Mount Rainier.[78]

While all this work progressed, Yeager wrestled with growing threats to continued productivity. As in the East preparations for war took precedence. The western laboratories' emergency relief work force disappeared with the cutoff of the WPA projects in July and the CCC detachment in August 1941. Yeager, Moffett, and two clerical helpers had to inventory the large volume of equipment and supplies that remained and get everything moved out of the Emeryville shops to storage in two former CCC barracks at Strawberry Canyon. Various defense agencies accepted many items by transfer; the rest required a second move to storage space in the old San Francisco Mint, where it stayed until after the war. The Old Mint, which would find a later place in the Park Service museum program, also provided some work space. Moffett set up shop there before the end of August. Because the building had only direct current, he could not use power tools. After a fruitless wait he installed AC wiring himself and continued to work on unfinished exhibits until funds to pay his salary ran out in June 1942.

Yeager also worked hard on the transition, although a special assignment called him to Washington for two months in the fall of 1941. Upon his return he began a wartime arrangement whereby he spent half his days on museum matters at Hilgard Hall and half as acting regional naturalist in the San Francisco office of Region Four. He initiated a survey of museum needs in western parks as a basis for setting priorities when planning could resume.[79] This marked the end of his assignment in the Museum Division. For the remainder of his long Service career he was the western region's chief interpreter, a position in which he continued to support the museum program strongly.

The year 1940, with World War II already underway in Europe, provides a convenient benchmark for charting changes in Park Service museums. The museum survey noted above revealed an almost phenomenal quantitative growth during the Depression decade. A general memorandum that spring summarized parallel developments in museum policy and procedure, which had moved far toward truly professional standards. It stated authoritatively the primary responsibility of the Museum Division in the design and construction of all Service exhibits—those in museums, trailside exhibits and markers, and displays intended for fairs, conventions,

and meetings. By implication, at least, it included historic house museums within division oversight. It confirmed sound guidelines to define the proper scope of park museums and set accession policy accordingly. It prescribed the procedure for preparation and review of museum prospectuses and exhibit plans. For the first time it established a required system of museum accession and catalog records, although a rather loose one that retained older optional forms.[80] The Service's *Field Manual for Museums*, soon to be published, gave fuller treatment to all these matters and replaced Laurence Vail Coleman's manual as the standard reference for park museums on policy, procedures, and technique.

Two meetings in 1940 also shed light on the state of museum work in the parks. The Region One Historical Technicians Conference met in Richmond at the end of April. The recommendations of a committee headed by Ned Burns emphasized a shortcoming of most park museums: the lack of specimens. The committee urged the historians to collect material objects of interpretive value on a systematic, selective basis and to learn how to use them as interpretive tools. As a corollary Carl Russell advocated more attention to historical research and publication on artifacts. In November the Second Park Naturalists Conference convened at Grand Canyon National Park. Burns again stressed collections and also the need for complete museum records, more adequate housing for exhibits and collections, still better exhibits, and more studies of their effectiveness. He called for closer integration of museum developments into the total interpretive program and increased use of trailside exhibits. Yosemite park naturalist Matthew Beatty presented a statistical analysis that showed exhibits accounting for more than half the total interpretive contacts in the parks, far in excess of the guided field trips that consumed most of the interpreters' time.[81]

By 1940 museums had become a major factor in helping visitors enjoy the parks. Professional leadership was pinpointing the aspects of museum management and development most in need of strengthening.

The Wartime Museum Program

World War II upset the normal course of museum work in the Park Service for about five years. The war not only forced strict limitations on manpower and money, it set tasks. At the same time, what the decimated Museum Division and the undermanned park museums were called upon to do as part of the war effort fitted precisely the continuing responsibility of the Service for the resources in its care.

In February 1941 Waldo Leland initiated action to guard the nation's cultural heritage from the growing threat of war. On behalf of the National Resources Planning Board he assembled representatives of such agencies as

the National Park Service, the Smithsonian Institution, the Library of Congress, and the National Archives. They organized a Committee on the Conservation of Cultural Resources with modest funding from the board. The committee set quietly to work on measures aimed to protect important collections from potential enemy attack. They identified remote places where especially valuable collections might be moved for safer storage. They encouraged their institutions and probably others to select in advance which treasures to evacuate. They compiled advice on packing and shipping and on protecting collections left behind. Ned Burns had particular responsibility for recommending methods appropriate for historic objects. He and Ronald Lee helped draft for the committee a manual on protecting cultural resources against the hazards of war. A supplementary handbook compiled by Hans Huth described practices that had given some protection to European collections and historic structures during early years of the war.[82]

The committee's work led to the evacuation of important national treasures to safe hiding places. Some, especially from the Smithsonian collections, went to a maintenance building in Shenandoah National Park. As part of this process the Park Service in June launched an inventory of the "historical, scientific, and art objects which are regarded as irreplaceable or unusually valuable and, therefore, worthy of special attention in case of a national emergency." The lists, called for by the Advisory Board on National Parks, Historic Sites, Buildings, and Monuments (of which Leland was a member), went to Burns for compilation. He verified returns by visiting most of the vulnerable eastern coastal parks. Shortly after the Pearl Harbor attack brought the United States fully into the conflict, Burns, William Macy, and Rudolf Bauss hastened to pack key items from the Lincoln Museum collection for transport to safety. By January 1942 instructions went out to Colonial National Historical Park, Fort McHenry, Fort Pulaski, Castillo de San Marcos, and Statue of Liberty national monuments, and Boulder Dam National Recreation Area to pack listed specimens for evacuation.[83]

As the progress of the war lessened the danger of enemy air raids, park museums faced a different hazard foreseen by Burns at the American Association of Museums meeting in May 1942. There he warned against letting patriotic enthusiasm in response to campaigns for scrap metal and paper overcome good curatorial judgment. Curators should be careful to sort out and retain irreplaceable objects and records of historical or artistic significance, he declared. A few months later the Service came under pressure to turn in for scrap all the bronze cannon, statues, and tablets in the parks. In response, it staunchly maintained its obligation to preserve these artifacts for future generations.[84] The crisis passed within a few

months, and Director Newton B. Drury, who bore the brunt of the pressure, saw his firm stand vindicated.

Foreseeing the economic and related problems that would face the United States when industry shifted from war production to business-as-usual, the Roosevelt administration requested federal agencies to prepare proposals for a postwar public works program. The Park Service responded to this initiative by concentrating much of the effort of its reduced staff on projecting park needs. The first result, an advance survey and planning program, was submitted in December 1943. During the next year and a half the Service refined not only its proposals and estimates, but also its procedures. A memorandum signed by the acting director in June 1945 ordered parks to seek development funding only with project construction proposals, which superintendents were responsible for preparing. Thanks to Burns the memorandum required "proposals for museum buildings [to] include estimates for equipment, such as cases, special lighting devices, etc., and preparation and installation of exhibits."[85]

In late 1942 and 1943 Burns and Yeager energetically gathered and checked data for the advance survey. Information from all project proposals involving museum work was transcribed onto index cards, and the two developed a "price list" of exhibit preparation costs. Lyle Bennett, associate regional architect in Santa Fe, produced a useful "Checklist for Museum Planning." By the end of the war the Service had a long priority list of needed construction projects based on approved proposals and careful cost estimates. The list included a fair share of museums. When the first trickle of construction money became available in the 1946 fiscal year, Burns lost no time in getting work started on the backlog of museum planning.[86]

Another phase of the wartime museum program started first and lasted longest. In October 1940 the Advisory Board on National Parks recorded its belief that both the historical and scenic parks had an important role "in promoting patriotism, in maintaining morale and understanding of the fundamental principles of American democracy, and in inspiring love of our country." It recommended that the Service expand its interpretive efforts, including those involving park museums. Carl Russell carried this message to the Second Park Naturalists Conference a few weeks later. Burns spoke along similar lines at the American Association of Museums meeting in May 1941 and Russell again made the point at the 1942 AAM meeting. The Service's interpretive program nevertheless suffered severe cuts in manpower and funding. Much of the load fell on park museums, which with minimum staffing could still present the objects and ideas the parks were created to preserve. The situation at Yosemite was perhaps typical; practically all the naturalist activities were eliminated, but the park museum remained open throughout the war.[87]

Some strategically located parks maintained more active programs. Castillo de San Marcos in St. Augustine, Florida, installed temporary displays appropriate to the nearby Coast Artillery School. At the Statue of Liberty, the Washington Monument, and the Lincoln Museum at Ford's Theatre, park staff also prepared timely short-term exhibits. Several of the battlefield parks used their still-inadequate museums to supplement training exercises conducted from neighboring military bases. The newly installed temporary museum at the Jefferson National Expansion Memorial aimed its wartime efforts toward the civilian population of St. Louis. It provided a center for a changing series of special exhibitions, a structured program of field trips for local schools and youth groups, illustrated historical talks, and walking or streetcar tours to historic sites in or near the city.[88]

The price park museums paid to remain open and active while undermanned corresponded to that paid by the parks as a whole. Collections languished from lack of curatorial attention and exhibits deteriorated in the absence of adequate maintenance. At the same time. the wartime museum program earned stronger support for the future by establishing a fuller understanding of the needs and potential of museums in the parks.

NOTES

1. Letters, Russell to Betty Russell, Apr. 21, May 13, 1935, Richard W. Russell Personal Files.

2. Letters, Russell to Betty Russell, Jan. 17, Apr. 14, July 6, 1935, ibid.

3. Russell referred to the museum division in organization charts and in correspondence to applicants during March and April, if not earlier.

4. Letters, Russell to Betty Russell, Jan. 20, 23, 25, 26, 1935, Richard W. Russell Personal Files; Carl P. Russell Diary, Jan. 19-29, 1935, ibid.

5. Russell Diary, Feb. 6, 7, 1935; letters, Russell to Betty Russell, Feb. 8, 18, Mar. 21, Apr. 22, June 10, July 27, Sept. 7, 1935.

6. Letters, Russell to Betty Russell, Feb. 8, Aug. 14, 1935.

7. Competition in case bidding followed the entry of the Michaels Art Bronze Company into the product field.

8. Russell Diary, Feb. 4, 5, 11, 12, 16, 18-20, 21, 1935; letters, Russell to Betty Russell, Jan. 29, Feb. 5, 15, 23, 24, 1935.

9. Letters, Russell to Betty Russell, Mar. 8, 9, 14, 17, 19, 21, 30, Apr. 1, 11, 17, 28, May 24, Aug. 6, 1935.

10. Letter, Russell to Betty Russell, Aug. 6, 1935; letter, Ned J. Burns to Director, Mar. 19, 1937, in Fort McHenry "Gun Museum" exhibit plan, Fort McHenry box, NPS History Collection.

11. Memorandum, Russell to Harold C. Bryant, Apr. 11, 1935, 1935 Museums (73-98) folder, Annual Reports, Branch of Interpretation box, NPS History Collection; letters, Russell to Betty Russell, Jan. 29, Mar. 4, 14, 21, Apr. 5, 7, 1935.

12. Letters, Russell to Betty Russell, Mar. 27, Apr. 7, 9, 11, 12, 14, 16, 20, 1935.

13. Memorandum, Demaray to Museum Curators and Museum Assistants Assigned to Eastern Park Projects, Apr. 10, 1935, Museum Policy binder, R3238, NPS History Collection.

14. Ralph Henry Gabriel, ed., *The Pageant of America* (New Haven: Yale University Press, 1925-29); Francis Trevelyan Miller, ed., *The Photographic History of the Civil War* (New York: Review of Reviews Co., 1911).

15. Ralph H. Lewis, "The Vicksburg National Military Park Museum," *Museum News* 14, no. 19 (Apr. 1, 1937): 8.

16. Disher, a graduate of Pomona College, had worked at the Wayside Museum in Grand Canyon National Park and the Museum of Northern Arizona before undertaking graduate study in anthropology at Harvard, which included field work for the Peabody Museum of Archaeology and Ethnology. Everard was a Yale graduate whose father's position with the American Association of Museums as editor of *Museum News* augmented his familiarity with museum work. Stevens, who had graduated from the University of Chicago and begun a life-long interest in American Indians, was the son of Thomas Wood Stevens, prominent in the dramatic arts field. Starrett had majored in botany at the University of Pittsburgh under O. E. Jennings, who was also curator of botany and head of the education staff at the Carnegie Museum of Natural History. A Dartmouth graduate and one of Clark Wissler's students at Yale and Columbia, Ewers had conducted research at the American Museum of Natural History where Wissler was the curator-in-chief of anthropology. Lewis had taken Foyles' museum methods courses at the University of Rochester and worked part time in the university's natural history museum before undertaking graduate studies in entomology. Titiev had just earned a Ph.D. in anthropology at Harvard and was well acquainted with museum methods as practiced at the Peabody Museum. Memorandum, Russell to Harold C. Bryant, Apr. 11, 1935, 1935 Museums (73-98) folder, Annual Reports, Branch of Interpretation box, NPS History Collection; Carl P. Russell, "Museum Studies Made by the Eastern Museum Division, April to July 1935," ibid.; *Park Service Bulletin* 5, no. 4 (May-June 1935): 28, and 8, no. 1 (January-February 1938): 38.

17. Russell, "Museum Studies Made by the Eastern Museum Division"; letters, Russell to Betty Russell, June 19, 24, July 23, 1935; letter, Russell to Ralph H. Lewis, July 11, 1935, Hot Springs National Park box, NPS History Collection; Vernon G. Setser, "Exhibit Plan, Historical Museum, Morristown National Historical Park," Morristown National Historical Park box, ibid.

18. Memorandum, Russell to Harold C. Bryant, Apr. 11, 1935, 1935 Museums (73-98) folder, Annual Reports, Branch of Interpretation box, NPS History Collection; letters, Russell to Betty Russell, Apr. 16, 17, 1935; letter, Vernon G. Setser to Elbert Cox, May 29, 1935, in "Exhibit Plan, Historical Museum, Morristown National Historical Park."

19. Letter, Setser to Cox, May 29, 1935; letters, Russell to Betty Russell, Apr. 17, 18, 1935.

20. Letters, Russell to Betty Russell, Feb. 11, 12, Mar. 4, 24, 27, Apr. 2, 12, 16, 20, 26, May 4, 7, June 1, 4, 6, 10, Aug. 4, 6, 14, 1935; *Park Service Bulletin* 5, no. 7 (September 1935): 27.

21. Letter, Russell to Betty Russell, Feb. 23, 1935.

22. Ralph H. Lewis, "Ned J. Burns, Educator, Naturalist, and Museum Expert," *Proceedings of the Staten Island Institute of Arts and Sciences* 16, no. 2 (Fall 1954): 61-74.

23. Thomas C. Vint, "Report on the Building Program from Allotments of the Public Works Administration, 1933–1937, Western Division, National Park Service," NPS History Collection.

24. Ibid.

25. Letters, Russell to Betty Russell, Jan. 18, Feb. 9, 11, 1935.

26. Letters, Russell to Betty Russell, June 6, 10, 1935. The Ocmulgee National Monument museum building, whose construction was interrupted by World War II, affords a good example of curator-architect collaboration.

27. Museum Policy binder, NPS History Collection.

28. Letter to Betty Russell, Apr. 23, 1935.

29. Letters, Russell to Betty Russell, May 1, 24, July 6, 10, 1935.

30. Russell, "Museum Studies Made by the Eastern Museum Division, Exhibit Plans for Interior Museum," 1935 Museums folder, Annual Reports, Branch of Interpretation box, NPS History Collection; letters, Russell to Betty Russell, Aug. 4, 6, 1935.

31. Museum Division monthly report, March 1938, Monthly Reports, Museum Division 1936-39 box, NPS History Collection; Burns, "The History of Dioramas," *Museum News* 17, no. 16 (Feb. 15, 1940): 8-12.

32. Report of the Morristown Field Laboratory for December 1935, Monthly Reports, Museum Division 1936-39 box, NPS History Collection.

33. After World War II Van Cott became principally responsible, with William C. Macy, for the exhibition program of the Armed Forces Institute of Pathology and Medical Museum. Warthen brought to his painting experience that included service in a Texas penal road gang, the police having seized him as a vagrant early in the Depression. Jansson was a second-generation designer for Steuben Glass. Urban, a fine craftsman, had flown private airplanes before a serious illness. When Jackson died at the age of 99 in 1942, Ned Burns, John Doerr, and Victor Cahalane of the Park Service met the train that brought his body to Washington and attended the burial in Arlington National Cemetery.

34. Monthly Reports, Museum Division 1936-39 box, NPS History Collection.

35. Letters, Russell to Betty Russell, Aug. 23, Sept. 1, 3, 1935.

36. Memorandum, Russell to Harold C. Bryant, Hillory A. Tolson, and Verne E. Chatelain, Jan. 14, 1936, 1936 Museums folder, Annual Reports, Branch of Interpretation box, NPS History Collection; memorandum, Tolson to Russell, Jan. 15, 1936, ibid.

37. Letter, Russell to Ansel Hall, Jan. 15, 1936, ibid.; memorandum, Kenneth B. Disher to Conrad L. Wirth, Mar. 15, 1936, ibid.; memorandum, Russell to Wirth, May 9, 1936, ibid.

38. *Park Service Bulletin* 6, no. 7 (August 1936): 26; letter, Russell to Fryxell, May 19, 1936, 1936 Museums folder, Annual Reports, Branch of Interpretation box, NPS History Collection; memorandum, Russell to Burns, June 16, 1936, ibid.

39. In 1938 the Branch of Research and Education became the Branch of Research and Information. "Education" sometimes encountered a hostile response in Congress. When "Information" also proved unsatisfactory, "Interpretation" replaced it in October 1940. Concurrent with the 1938 change, branch chiefs became supervisors instead of assistant directors.

40. *Museum News* 14, no. 16 (Feb. 15, 1937): 1, 4; ibid. no. 19 (Apr. 1, 1937): 1; ibid. no. 20 (Apr. 15, 1937): 1; ibid. 15, no. 4 (June 15, 1937): 1; ibid. 15, no. 9 (Nov. 1, 1937): 5; ibid. 15, no. 18 (Mar. 15, 1938): 1; ibid. 16, no. 12 (Dec. 15, 1938): 7-8; *Park Service Bulletin* 7, no. 2 (March 1937): 16-17; ibid. no. 4 (April/May 1937): 24; ibid. no. 7 (August 1937): 9; Monthly Reports, Museum Division 1936-39 box, NPS History Collection.

41. Park Service procurement officer Roger Rittase appreciated the need for exceptions to standard practice, for he was himself a competent artist painting as a hobby.

42. A director's memorandum to all field offices of October 21, 1936, focused exhibit preparation and revision in the Museum Division laboratories (Museum Policy binder, NPS History Collection).

43. See reports for eastern park museums, January and July 1937, in Monthly Reports, Museum Division 1936-39 box, NPS History Collection.

44. *Park Service Bulletin* 8, no. 8 (November/December 1938): 27; memorandum, Carl Russell to Ned Burns, June 16, 1936, 1936 Museums folder, Annual Reports, Branch of Interpretation box, NPS History Collection.

45. Museum Division monthly report, July 1937, Monthly Reports, Museum Division 1936-39 box, NPS History Collection.

46. Secretary's Order No. 1365, Mar. 27, 1939, Museum Policy binder, NPS History collection.

47. Museum Division monthly report, March 1938, Monthly Reports, Museum Division 1936-39 box, NPS History Collection.

48. Museum Division monthly report, October/November 1938, ibid. Both curators brought back much from their year of study. Having learned that an exhibit planner must maintain close contact with museum visitors, Lewis obtained permission to observe visitor behavior in the National Museum on weekends under the supervision of Frank Setzler, head curator of anthropology.

49. 1938 Museums folder, Annual Reports, Branch of Interpretation box, NPS History Collection.

50. Russell, "A Museum of the American Fur Trade, Proposed Feature of the Jefferson Memorial, St. Louis, Missouri: Prospectus and Tentative Exhibit Plan," Sept. 1, 1936, Jefferson National Expansion Memorial box, NPS History Collection; Peterson, "A Museum of American Architecture," *The Octagon* 8, no. 11 (November 1936): 3-7.

51. Museum Division monthly report, July 1941, Monthly Reports, Museum Division box, NPS History Collection.

52. Museum Division monthly report, May/June 1939, Monthly Reports, Museum Division, 1936-39 box, NPS History Collection.

53. Museum Division monthly reports, February 1941, June 1942, Monthly Reports, Museum Division box, NPS History Collection. Buffmire's work on the Kings Mountain project foreshadowed his later important contribution to the Park Service museum program.

54. Hopkins, "Testing the Ferguson Rifle," *The Regional Review* 6, nos. 1 and 2 (January/February 1941): 32-33.

55. Museum Division monthly report, March 1940, Monthly Reports, Museum Division box, NPS History Collection.

56. Branch of Research and Information report, October-November 1938, ibid. Reportedly Ickes also remarked that he did not want to see any of "those damn Park Service uniforms" around the museum either.

57. Letter, Burns to Yeager, Feb. 26, 1937, 1937 Museums folder, Annual Reports, Branch of Interpretation box, NPS History Collection; "Book of Museum Procedure" in Exhibit History 1939-40 box, ibid.

58. Reports of Ford's Theatre and Western Museum laboratories for June-July 1940 and Museum Division for July 1940, Monthly Reports, Museum Division box, NPS History Collection. Partially in recognition of the manual's value, the Museums Association, London, designated Burns a fellow in 1952. In the mid-1960s the director of a leading provincial museum in Great Britain asked the writer for a personal copy, saying it had been the museological bible of his nurture.

59. Museum Survey of 1939-40 folder, Exhibit History 1939-40 box, NPS History Collection.

60. Branch of Research and Information report for October-November 1938, Monthly Reports, Museum Division 1936-39 box, NPS History Collection.

61. As an unfortunate side effect of the appointment, a jealous colleague accused Bauss of involvement in Nazi espionage. After a grueling investigation the FBI cleared him of all suspicion. The incident destroyed trust in his accuser.

62. Museum Division monthly report, May/June 1939, Monthly Reports, Museum Division 1936-39 box, NPS History Collection; report for June/July 1940, ibid.

63. Museum Division monthly reports, February-April and July 1941, February and July 1942, Monthly Reports, Museum Division box, NPS History Collection.

64. Museum Division monthly reports, September-December 1941 and January-March 1942, ibid. The staffing crisis underlined the close relationships that had developed between the Museum Division and the Branch of Historic Sites under Ronald Lee. When he learned of the situation, Lee made a historian's position available in St. Louis. Lewis thus went there as a historical technician rather than as a curator.

65. *Museum News* 20, no. 13 (Jan. 1, 1943): 1, 4, 5; ibid. 21, no. 14 (Jan. 15, 1944): 7-8.

66. "Summary of Activities, Field Division of Education, Berkeley, California, from July 1933 to March 1935," Annual Reports, Branch of Interpretation box, NPS History Collection.

67. Ibid. Russell also played a leading role in the western PWA projects, especially Moraine Park and Scotts Bluff, until his detail to Washington.

68. Letter, Russell to Hall, Jan. 18, 1936, 1936 Museums folder, ibid.

69. Ned J. Burns, *Field Manual for Museums* (Washington: National Park Service, 1941), pp. 15-17; Museum Division monthly reports, May-October 1939, Monthly Reports, Museum Division 1936-39 box, NPS History Collection.

70. Letters, Russell to Betty Russell, Aug. 23, Sept. 7, 1935; Monthly Reports, Museum Division box, NPS History Collection; Western Museum Lab Reports box, ibid. "I do not want a gang of several hundred louts on my hands," Russell wrote his wife. "I am not yet reconciled to dropping my standards to the point of taking on these relief workers."

71. *Park Service Bulletin* 7, no. 5 (June 1937): 8; ibid. no. 6 (July 1937), p. 9.

72. Monthly Reports, Museum Division box, NPS History Collection; Western Museum Lab Reports box, ibid. After all the labor that went into it, the bibliography elicited criticism from John Merriam.

73. Ibid.

74. Ibid.

75. "Miscellaneous Products Available to National Parks and Monuments from Western Museum Laboratories," WML, WPA Prop. Products Cat. box, NPS History Collection; memorandum, Yeager to All Field Offices, May 13, 1941, ibid.

76. Monthly Reports, Museum Division box, NPS History Collection; Western Museum Lab Reports box, ibid.

77. Ibid.

78. Ibid. See reports for August 1938, February, March, June, August, September, November 1939, January, March-September, November 1941.

79. Monthly Reports, Museum Division box, NPS History Collection.

80. Memorandum, Arno B. Cammerer to Washington and All Field Offices, Mar. 13, 1940, Museum Policy binder, NPS History Collection. The only previous formal instructions on museum record procedures seem to be those prepared for the Morristown museum in 1935; copy ibid.

81. "Recommendations of the Historical Technicians Conference, Region One, April 25-27, 1940," pp. 4-5, Interpreters' Conferences 1929-52 box, NPS History Collection; "Full Report of Committees, Historical Technicians Conference," p. 7, ibid.; "Minutes of the Historical Technicians Conference," pp. 9-10, ibid.; "Proceedings of the Second Park Naturalists Conference Held at Grand Canyon National Park, November 13-17, 1940," pp. 131-39, 145-49, 156-62, 228-36, 350-51, NPS History Collection.

82. Charles W. Porter III, ed., "National Park Service War Work, December 7, 1941, to June 30, 1944," p. 39, World War II, NPS, K5410 box, NPS History Collection. Huth, a refugee from Nazi Germany sponsored by the Carl Schurz Foundation, worked closely with the Branch of History during the war. As former curator of the Potsdam Palace collections, he brought the Service a far higher level of curatorial scholarship in the arts than it had known previously.

83. Memorandum, Arthur E. Demaray to All Field Offices, June 20, 1941, Museum Memos 1941 folder, Exhibit History 1941-59 box, NPS History Collection, Museum Division monthly reports, November and December 1941, January 1942, Monthly Reports, Museum Division box, ibid.

84. Burns, "Wartime Loss of Valuable Objects and Records through Misguided Salvage Efforts," *Museum News* 20, no. 16 (Feb. 15, 1943: 7-8; Porter, "National Park Service War Work," pp. 39-41.

85. Memorandum, Hillory A. Tolson to Director's Office and the Regional Directors, June 29, 1945, Project Construction Program-General folder, Unlabeled Museum Files box, NPS History Collection.

86. In January 1946, for example, Burns arranged Ralph Lewis's detail from Jefferson National Expansion Memorial to Great Smoky Mountains National Park to collaborate with park naturalist Arthur Stupka in preparing a museum prospectus.

87. "Proceedings of the Second Park Naturalists Conference," pp. 335-46, 359; Burns, "Park Museums and Public Morale," *Museum News* 19, no. 10 (Nov. 15, 1941): 11-12; "Practical Aspects of Park Museum Problems in Time of War," Exhibit History, 1941-59 box, NPS History Collection; Ralph H. Lewis, "Designing an Exhibit of American Democracy in a National Park," *Museum News* 21, no. 14 (Jan. 15, 1944): 7-8; Frank A. Kittredge, "Yosemite During the War Years," *Yosemite Nature Notes* 25, no. 5 (May 1946): 73-76.

88. Porter, "National Park Service War Work," pp. 31, 33-34; Jefferson National Expansion Memorial boxes, NPS History Collection.

THE MUSEUM BRANCH, 1947–1964

The National Park Service entered the postwar years with a huge backlog of deferred maintenance and a depleted staff. During the difficult transition to a peacetime economy Congress increased appropriations for the parks, but slowly in the face of many other urgent demands. Meanwhile the number of park visitors grew at an unprecedented rate. These factors in combination threatened disaster. A decade after V-J Day influential voices called for closing the parks before they wore out beyond repair. It took Mission 66, an emergency development program, to turn the tide.

Before Mission 66 money for museum development came grudgingly from Congress. Some key congressmen viewed any kind of museum as inappropriate for federal funding. To them the word had a negative connotation, much as "education" had in the 1930s. Sensitivity to this aversion infiltrated the parks in some measure. There was talk of hiding museums under a different name, and one superintendent even forbade his historian to put up a sign pointing out the park museum. Consequently the Service had to depend for several years on supplementing designated museum development allotments with a succession of reimbursable jobs and donations. Existing museums, on the other hand, found a welcome place in the strained but regularly funded maintenance program.

Progress on postwar museum projects was also hampered by a two-year delay in moving the director's staff back to Washington from its wartime headquarters in Chicago. Coincidental with the move the Interior Department reversed the terminology for organizational units in its bureaus. To agree with practice in other departments, "division" became the term for the higher echelon and "branch" for its subunit. In October 1947, therefore, the Museum Division of the Branch of Natural History became the Museum Branch of the Natural History Division.

For the Museum Branch the period before Mission 66 witnessed evolutionary changes in exhibit thought and practice, a marked increase in attention to curatorial concerns, and a ready acceptance of scientific specimen conservation as a new museum discipline. (Curatorial and conservation developments will receive fuller discussion in subsequent chapters.) Mission 66 then brought an upsurge of opportunity to expand museum services to parks and their visitors.

Resumption of Museum Development

Ned Burns made a field trip to New Mexico in the spring of 1946. His assignment included examining the site of the first atomic bomb explosion, which was being proposed for the national park system. The spot qualified

in historical significance, but he judged the visible evidences of the blast quite impractical to preserve. His trip also took him to 14 national parks in the Southwest where he inspected museum conditions. All had suffered from wartime neglect and needed help for which neither funds nor personnel were available. White Sands National Monument had barely enough money in its museum account to replace a fourth of the museum light bulbs that would burn out during the year.[1] Parks throughout the system faced comparable problems. Burns could take only a little positive action before new appropriations came from Congress.

That January Burns had launched one planning project, the new prospectus for Great Smoky Mountains National Park noted previously. Funds available for the Jefferson National Expansion Memorial allowed him to start a limited exhibit preparation scheme as well. It reflected Carl Russell's abiding interest in fur trade history, and Russell undoubtedly had a hand in its inception. Two artists were hired to make detailed drawings of objects typical of the Rocky Mountain fur trade and sketches showing the manner of their use. The pictures would fill an anticipated need in future exhibits at the memorial. Time would prove them doubly useful as illustrations for books Russell hoped to produce on the material culture of the trade.[2]

William Macy, former chief of the Eastern Museum Laboratory, and James M. Mulcahy entered on duty in May. New to the Park Service, Mulcahy had taught art before seeing combat with the Army in the Pacific. The two began work in Chicago under Russell's critical eye. After becoming familiar with the subjects and standards of accuracy he desired, they set up their studio at the memorial in St. Louis. Their assignment continued until mid-1948 during which they produced a substantial body of good work. When they had finished, Macy moved to the Armed Forces Medical Museum in Washington, where he teamed with former Park Service exhibit construction specialist Herman Van Cott on an extensive exhibition program for the Institute of Pathology. Mulcahy transferred to the reopened Museum Branch laboratory which was in the midst of its first postwar projects.

Appropriations for the 1947 fiscal year made it possible to resume museum development. The Service received $55,600 allocated to prepare and install exhibits in four unfinished park museums: Chickamauga, Guilford Courthouse, Kings Mountain, and Manassas. The Kings Mountain museum lacked only a few of its planned exhibits, but the other three contained only stopgap displays assembled in the empty rooms and cases by local staff. Exhibit proposals approved in the 1930s for Chickamauga and Guilford Courthouse had grown obsolete meanwhile, and Manassas had only the beginnings of an exhibit plan. The slim allotment therefore needed

Museum Laboratory at Ford's Theatre, 1946. Ralph Lewis and Albert McClure pour a mold for a topographic model for Chickamauga and Chattanooga National Military Park.

Frank E. Buffmire. At work on a diorama for Chickamauga and Chattanooga National Military Park.

to cover planning as well as preparation. Burns responded by reestablishing the museum laboratory, but on a necessarily modest scale.

The laboratory reopened in December 1946 on the third floor of the Ford's Theatre building in Washington.[3] Its two initial employees were Ralph Lewis, curator and assistant chief of what would soon become the Museum Branch, and preparator Albert McClure. They found this a familiar setting, for it was part of the space occupied by the prewar laboratory where both had worked. Much of the old laboratory equipment was present and in good order thanks particularly to Rudy Bauss, another former staff member, who had exercised watchful care over it from his National Capital Parks museum maintenance center elsewhere in the building. Army topographic model builders had used the rooms and equipment for nearly five years before releasing them the preceding day.

Although it permitted an immediate start on exhibit production, the location had two serious disadvantages. Laboratory occupancy constituted a fire risk unacceptable in a historic building, as the Service now realized. With the wholehearted concurrence of the museum staff, Associate Director Arthur E. Demaray insisted that the laboratory remain only until another place could be found and saw to it that an active search began at once. The other disadvantage involved access. All materials and supplies had to be hand-carried up long flights of stairs from busy 10th Street or else snaked through alleys and hauled up by block and tackle.[4] Finished exhibits, often larger and heavier, had to leave the building by the same awkward and hazardous routes.

McClure, a five-year veteran of the prewar laboratory who had been part of the Army topographic model unit, began immediately on a job that did not need a new plan: redoing a badly worn relief map from the Chickamauga museum. With Lewis's help he made a new cast from the old model, painted it using the latest techniques, and finished it with his skillful hand lettering. Burns then enlisted him for an assignment not connected with the laboratory: caring for the rich furnishings at Vanderbilt Mansion National Historic Site. This responsibility, later extended to the Franklin D. Roosevelt Home nearby, fully engaged his talents until he retired 22 years later.

In the absence of viable plans for the exhibits to be constructed, staffing increased at a cautious rate. Frank Buffmire reported to the laboratory in January 1947 as a second preparator. He had worked on the Kings Mountain exhibits in 1940-41, and after war service he had gained recognition as an artist in his native Wisconsin. He brought the laboratory a combination of skills, temperament, and judgment that made him a natural leader there for the rest of his life. Robert Scherer entered on duty in March as a third preparator. New to the Park Service, he came with excellent training from the American Museum of Natural History and could

produce admirably almost any kind of exhibit work required. Later he became chief preparator and remained until the laboratory moved out of Washington. To replace McClure Burns selected Laurence Cone, who transferred from a park ranger position at Natchez Trace Parkway in June. More a craftsman than a schooled artist, Cone carried his share of exhibit production creditably until becoming a laboratory curator several years later. In 1957 he transferred to the Indian Arts and Crafts Board and moved to the Southern Plains Indian Museum in Anadarko, Oklahoma. The arrival of James Mulcahy in July 1948 completed the exhibit preparation roster for the first phase of the new laboratory.

The laboratory needed someone to procure and keep track of equipment and supplies, maintain cost and time records, and perform other essential clerical duties, and in February 1947 Burns employed Merwin N. Seybolt for this purpose. A willing worker ready to help with any task at hand, Seybolt used available equipment to print labels for park museums not covered by the initial allotment and installed the wiring for the laboratory's first electric map. When a better opportunity for clerical advancement opened in the departmental offices, the laboratory felt his loss.

All four of the museums scheduled for exhibits concerned battles, so someone versed in military history and artifacts was needed to research diorama details, draft labels, gather data, and check exhibit accuracy as well as locate and acquire specimens. Burns' first selection for this curatorial job, Maxson Holloway, made a promising start in April 1947 but resigned after a month to accept the directorship of the new Saginaw Art Museum. The position remained vacant until August, when Harold L. Peterson entered on duty. Peterson had recently earned a master's degree in history from the University of Wisconsin, where he had chosen his thesis subject in military material culture for a department that openly questioned the validity of objects as historical documents. The thesis formed the basis for his first book, *Arms and Armor in Colonial America*, published in 1956. It marked him at once as an authority.

Peterson had other curatorial qualifications resulting in part from his activities as a studious, discriminating private collector. His fine collection of early weapons and armor and books concerning them continued to grow after he entered Park Service employment. Allowing curators to engage in this practice entailed ethical hazards, but scrupulous integrity on his part avoided conflicts of interest. Assembling and maintaining his own collection schooled him in the skills of expert identification, developed his judgment in matters of quality and authenticity, made him familiar with market values and acquisition procedures, and led him to study and personally apply safe, effective conservation methods. Through his collection he kept in close contact with an expanding international circle of curators, collectors, and conservators who shared his interests and

Harold L. Peterson. The Service's foremost authority in the curation of arms and armor.

friendship. His later active role in such organizations as the Company of Military Historians, the International Association of Museums of Arms and Military History, and the Washington Conservation Guild added continually to his curatorial competence. At the outset he picked up the work Holloway had started on the Manassas exhibit plan.

During the start-up period, production could not wait until an approved plan detailed all the exhibits for any one of the four museums. Preparation work proceeded on exhibit units one at a time as the concerned parties reached agreement on what they wanted. By 1947 two of the parks involved had historians as superintendents, two had staff historians, and the Region One office in Richmond had an able regional historian. All had a lively interest in the exhibit plans. Staff members of the History Division returning to Washington from Chicago also had a stake in the historical accuracy and interpretive effectiveness of the exhibits. Superintendents and park historians traveled to Washington to discuss exhibit form and content, accompanied on occasion by the regional historian or by outside experts. Drafts, layouts, label copy, and memoranda filled with suggestions or rebuttals shuttled back and forth. On one occasion the entire Museum Branch staff spent a Saturday at Manassas going over layouts with the superintendent.

The involvement of so many individuals in the planning had obvious value, but at the expense of production efficiency. A heated debate developed between Manassas and the History Division over a detail in a

diorama. The laboratory planned the diorama carefully to depict a critical point in the battle and at the same time to illustrate a well-known incident: Confederate General Bernard Bee stemming the retreat of his troops with the cry "There stands Jackson like a stone wall! Rally behind the Virginians." The painted background would reveal Jackson and his fresh regiments lining the crest of Henry House Hill. Work on the scene had to stop while the park insisted that Jackson's men had stood in line of battle and historians in Washington argued that they were then prone. Finally the laboratory effected a compromise by painting some companies standing and others prone.

The need for more systematic and expeditious planning became evident, resulting in an allotment of $25,000 from the 1948 fiscal year Physical Improvements Program for use by regional offices. Region One employed Paul Hudson and Region Two selected Yosemite naturalist Harry B. Robinson as museum planning curators near the end of 1947.[5] The rather chaotic planning situation for the four battlefield museums also brought the laboratory curators and artists into closer collaboration on exhibit design problems, a step toward later practice.

The Manassas museum, the first completed, opened on schedule May 28, 1949, after a typical last-minute installation scramble that saw Burns in the midnight hours cutting large sheets of plate glass unerringly on the museum floor. The exhibits exemplified the characteristics of park museums for the next several years. They retained their function as the primary medium introducing visitors to the park's significance. To underline this purpose a panel at the entrance to the exhibit area stated the prime meaning of Manassas as a historic site. The exhibits proceeded to develop this concept of significance by presenting facts and ideas in a logical sequence that visitors could follow as their time and interest dictated. In doing so the exhibits continued the prewar approach, but with important differences.

One change was the increased use of specimens. Artifacts provided specific visible evidence against which visitors could weigh the statements made. Other objects served as evocative symbols. Specimens associated with a particular person or incident added a sense of reality to certain parts of the narrative, such as an account of Captain James B. Ricketts, wounded and captured at First Manassas, who returned to exercise an important command in the second battle. One large case displayed a synoptic series of Civil War swords imaginatively installed. This provided a footnote to the main story and fostered the suggestion that Civil War parks specialize in different categories of pertinent artifacts to avoid duplication. Another important change involved the consistent use of graphics originally produced by eyewitnesses of the war in place of illustrations by laboratory artists. A contemporary photograph or field sketch was thought to embody

an element of validity missing from the interpretation of an artist born long afterward.

The electric map at Manassas also represented a departure from prewar practice. The laboratory kept the mechanism as simple as possible and it required little maintenance during more than 15 years of hard use.[6] Maintenance considerations affected the design and construction of the other exhibits as well. The Museum Branch believed that park museum exhibits should change about every five years to keep pace with developing knowledge and tastes, but experience taught that money to replace them might not come for several decades. The quality of craftsmanship that went into them precluded homemade repairs in most instances. So the exhibits were built to last.

Durability became especially important for open panels, which came into use for exhibit units that did not include specimens or that displayed individual objects within clear plastic protective boxes. Spray lacquers made the exposed panels washable and facilitated the application of background colors. The smoother, brighter finish also could be applied readily to the case backs and floors formerly covered with drab monk's cloth. The desire for more color in exhibits led to hiding the monk's cloth in several existing cases at Manassas under layers of paint. Lacquered panels also formed a good surface on which to letter labels. This new practice replaced the use of labels lettered on cards and then attached to the background, a distinct advantage from the design standpoint.

Such modifications in materials and methods applied to all four of the museums under production. A crew from the laboratory installed the Guilford Courthouse exhibits in time for the museum opening on July 4, 1949, then went on to Kings Mountain to add the remaining exhibits there before returning to Washington.[7] Installation of the Chickamauga museum had to wait until January 1951, partly because of other commitments.

Even with its minimal staffing the museum laboratory needed additional funds to meet its payroll while the initial projects were in planning and production. Help came through a number of smaller reimbursable jobs performed at the request of individual parks and other federal agencies. Fort McHenry obtained a panel outlining the history of the United States flag. Two parks needed topographic maps repaired. Others called on the staff's technical skills to reproduce the original flake of gold discovered at Sutters Mill in 1848 and to make casts of aboriginal stone pipes excavated at Mound City Group National Monument. Gettysburg and Colonial requested trailside exhibits. Southwestern National Monuments obtained labels printed by the laboratory clerk. The staff produced some map panels for the Utah Centennial and copies of them for the Library of Congress. The laboratory also executed two twenty-foot panel displays for the Atomic Energy Commission and helped the U.S. Travel Division prepare a portable

unit for exhibiting posters. Over about 15 months in 1947 and 1948 staff artists interrupted exhibit work several times to trace and letter archeological survey maps for Smithsonian river basin projects.[8]

These odd jobs were not the only cause of delay in completing the four battlefield museums. In January 1948 the Museum Branch moved its laboratory operation from the Ford's Theatre building to Fort Hunt, Virginia.[9] There it occupied the one-story structure that had housed the ECW relief map shop from 1934 to 1938. The Fort Hunt building provided adequate if not wholly convenient space for the existing staff, but the move seriously disrupted production, and the twelve-mile distance from Washington remained a continual disadvantage. Meeting with colleagues in the director's office and searching for data in libraries or museums took much more time, and employees coming to Washington on business could no longer pay the laboratory a quick visit to settle a question or become acquainted with its services.

As experience underlined these drawbacks, the search for a better location intensified. Attention focused on vacant space in a three-story ramp garage at 21st and L streets northwest rented by the Public Buildings Administration and partially occupied by a Signal Corps detachment assigned to the White House. It was practically the same distance from the director's office in the Interior Building as the Ford's Theatre building had been. In September 1948, only eight months after the laborious move to Fort Hunt, the laboratory moved to the second floor of the L Street wing, a large, high-ceilinged area undivided except for three office rooms at the south end.[10] The staff welcomed the practical advantages of this location and space as long as the government continued to lease the building.

In the short interval preceding the second move the laboratory gained one staff member and lost another. James Quinn entered on duty in April as a handyman-janitor and remained as a willing helper for years before transferring to the National Capital Parks maintenance force. In August Harold Peterson moved to the History Division, barely a year after his appointment as curator. Chief Historian Ronald F. Lee had recognized his exceptional talents and arranged to borrow his services for a few months. He remained with the historical research program for 16 years, not rejoining the Museum Branch until 1964.

Peterson's years with the History Division were by no means a total loss to the branch, even though it could not fill the curatorial position at the laboratory for some time. While there he fostered the cooperation Ronald Lee had established with the branch and represented the museum point of view in historical matters. The laboratory regularly consulted him on curatorial and conservation questions and obtained his help in specimen acquisition. An early example of his collaboration involved the old problem of training field personnel to meet their curatorial responsibilities.

This problem became increasingly acute as park museums and collections increased in number and complexity. The occasional interpreters' conferences could scarcely begin to meet the need, while the *Field Manual for Museums* was out of print and in some important respects out-of-date. Faced with this situation, the Museum Branch opened discussions with the History Division in September 1948 to develop a museum methods training program.[11] The training needed to prepare park staff members to take good care of the collections and exhibits entrusted to them, and also to use the museums actively as prime interpretive tools. It aimed to implant clear conceptions of proper standards for museum care and use, teach some specific skills, and stimulate and guide future self-development. Peterson drafted a preliminary outline of content for a four-week course. From his wartime experience as an instructor in bombsight maintenance, Chief Historian Lee insisted that the training be job-centered and practical. Staff members therefore converted the outline into a series of 16 specific jobs with assignments designed to accomplish each.

The Service did not then have an organized training program or a training budget, and funding for the course would be largely invisible. The Museum Branch and History Division absorbed the costs of planning, preparation, and instruction. The branch provided makeshift classroom space in the laboratory where daily contact with curators, conservators, and preparators would have many fringe benefits. Parks sending trainees had to cover their travel to and from Washington along with a modest per diem while they were on travel status. Applicants often had to persuade their supervisors to allot scarce travel money for their attendance. This tended to assure strongly motivated trainees, but not necessarily from parks having the most urgent need. The course also received substantial instructional help provided without charge by the museums and other institutions visited as an important part of the training—the Smithsonian museums, National Archives, other museums in Washington, and later the American Museum of Natural History and Colonial Williamsburg. With such shoestring financing the Museum Methods Course began its first session in January 1949.

The class got underway around a table in the L Street laboratory with enrollment limited to four trainees. One had to return home after three days, leaving museum assistant Vera Craig of Morristown, Fort McHenry park historian Harold Lessem, and Superintendent Raleigh Taylor from Guilford Courthouse as the first students. They spent hours cleaning rust from gun barrels under the guidance of Harold Peterson, who insisted that they use methods and materials that would not scratch uncorroded iron. They learned to distrust shortcuts employing chemical treatments, harsh abrasives, or power tools in the care of these and other artifacts. Ralph Lewis served as instructor for an introduction to museum theory and

professional literature, accessioning and cataloging procedures, specimen storage methods, label writing, and exhibit evaluation among other topics. Instructional methods involved reading assignments, class discussion, and visits to observe examples of good practice such as specimen records, storage, and labeling in the Freer Gallery; document lamination at the National Archives; mounting and fumigating techniques at the National Herbarium; and the use of standard storage cabinets at the National Museum.

The trainees responded well to the course, and the Museum Branch and History Division agreed to repeat it with a somewhat larger class and improvements suggested by experience.[12] The second session convened in October 1949 with eight trainees plus three from National Capital Parks who attended part time. As one modification in the curriculum the class designed, prepared, and installed a temporary exhibition at Appomattox Court House National Historical Monument. Nearly 18 months elapsed before the third offering in May 1951. Five students participated, one of them the director of the Iraq National Museum of Natural History under a UNESCO fellowship. This class also carried out a temporary exhibition project, an exercise abandoned thereafter because the trainees tended to concentrate on what they already knew rather than mastering new methods.

Later sessions returned to off-season dates, usually in January and February. The 1952 session inaugurated a field trip to observe museum practices in New York City institutions, to which a stop at Philadelphia was added the following year. The 1953 trainees were also encouraged to spend a weekend during the course at Colonial Williamsburg. Williamsburg would become the goal of a second field trip each year, but not until the course suffered an interruption. The death of Ned Burns in 1953 left the Museum Branch staff under too much pressure to continue preparing and conducting it, and it did not resume until January 1957. Annual sessions followed regularly for six more years, undergoing modification each time based on evaluations by trainees and staff. During this period class size averaged twelve to 15, usually with one or two from outside the Service, and the number of jobs in the curriculum increased to 21.[13]

The 1964 session presaged change. By that time the Stephen T. Mather Training Center at Harpers Ferry was in full operation. It offered a nine-week course in interpretation under experienced full-time instructors to classes of about thirty trainees whose expenses were paid out of programmed training funds. The Mather Center had a legitimate interest in the Museum Methods Course, for its content on museums and exhibits as interpretive tools appeared to overlap material in the Harpers Ferry course.[14] The differences were subtle. The Museum Branch aimed its training at improving the use of museums in the parks, while the center addressed park interpretation as a whole with museums one of several

presumably well-integrated media. As the first step in resolving the question of duplication, the Museum Branch and History Division conducted the 1964 session of their course at Harpers Ferry where the Mather Center staff could observe and appraise it.

The center concluded that it could absorb the museum content into its longer interpretation course, spelling an end to the History Division/Museum Branch course. During its 13 sessions over a period of 15 years it had provided a modest measure of museum training to 131 Park Service employees. Many were field interpreters who later advanced to higher positions but continued to have some involvement in or influence over museum matters. Even so the course could not keep pace with the training needs of the growing number of staff members assigned to park museum duties. Unfortunately, it soon became evident also that the evolving Mather Center curriculum did not meet the need for training in curatorial techniques. With changes in center leadership, concern for collection care quickly disappeared as a substantive part of the basic interpretive methods course. A fresh effort to fill the gap would become necessary.

Museum Growth Before Mission 66

The 1947 fiscal year appropriation had reactivated the museum laboratory by funding exhibit preparation for four museums already built. The only new construction of museum facilities before 1950 came through a gift from Julius F. Stone, an Ohio industrialist, who offered the American Pioneer Trails Association $10,000 toward a memorial to William H. Jackson. The association proposed that the memorial take the form of an addition to the Scotts Bluff National Monument museum, which commemorated the Oregon Trail. The Park Service agreed, and the association donated its significant collection of Jackson material for the new exhibit room. Included were sketches that Jackson had made of landmarks and activities along the Oregon-California Trail embodying his recollections from personal experience as a wagon driver in the late 1860s and photographer accompanying exploring expeditions in the early 1870s. Some of the sketches he had made as a young man, others the association had commissioned more than fifty years later. The museum laboratory added explanatory maps and labels, then sent a small crew to install the memorial exhibit in August 1949.[15]

In the 1950 fiscal year appropriation, for the first time since World War II Congress included funds to build park museums. The appropriation provided for completion of the museum building at Ocmulgee National Monument, interrupted by the war, and enabled the Service to build a museum at Custer (now Little Bighorn) Battlefield National Monument.

During the same period donated funds added two more substantial exhibit designing and building assignments to the laboratory workload, one for Hawaii National Park and the other for Federal Hall National Memorial.[16] With exhibits still to build for the Chickamauga museum and several smaller jobs on hand, the Museum Branch would have to increase its rate of output.

Ned Burns responded by recruiting additional staff. Frank Urban, who had worked for him when the laboratory was in Morristown, returned as a skilled model maker and craftsman to whom he could entrust critical tasks. Carl Christiansen was hired to model diorama figures and do expert casting. Gardell Christiansen (no relation to Carl) had worked at the American Museum of Natural History and qualified as a competent diorama sculptor. David Lillis had a background in commercial art and combined manual skills with resourcefulness and an unflagging willingness to work at whatever tasks were assigned.

Expansion continued in January 1951. Willie Liggan, an ex-Marine who transferred from the Armed Forces Medical Museum, carried the civil service title of illustrator but devoted his considerable talent almost exclusively to hand-lettering exhibit labels. Two other preparators were engaged as exhibit workers to perform routine jobs that required less exacting skills. Mary Sartor contributed effectively, but Juichi Kamikawa resigned when it became evident that he could not be kept usefully busy. Curator Floyd A. LaFayette in effect filled Harold Peterson's position. Like Peterson he came from the University of Wisconsin but with training as an art teacher rather than a material culture scholar. Bringing solid museum experience gained under John W. Jenkins at the State Historical Society of Wisconsin, he devoted his exceptional abilities to the Service's museum program for the rest of his life. Another curator, John Willett, used his experience with the National Museum to give good help in gathering data and exhibit materials during this period of special need.

Because the museums initiated in 1950 would contain more dioramas than usual and include subjects demanding sculptural skills, Burns sought another good sculptor. He chose Edwin Pearson, a mature artist from Hyde Park, New York, who worked sensitively and meticulously at the miniature scale required.[17]

Beginning in October 1950 the Museum Branch rearranged its L Street space to accommodate the growing staff. Work included enclosure of a small area for a darkroom and conversion of the largest office into a paintings conservation laboratory (the subject of further attention in a later chapter).[18] Managing the laboratory became more complex as the number and variety of employees increased. The capabilities of each new preparator had to be matched with the tasks that fitted his or her skills, requiring an assessment of individual aptitudes and close supervision until performance

measured up to Service standards. With several artists and craftsmen working simultaneously on the same exhibit, each had to keep on schedule to avoid costly delays. Fortunately Burns had the experience and interest to handle these challenges. He knew how far to overlook foibles and clashes of artistic temperament and when to call a halt. He could advise and criticize to good effect, for his standing as a diorama artist commanded the respect of the staff. Although he always exercised professional concern for the quality of laboratory output, the exhibits in the 1950 projects engaged his personal involvement to an unusual extent. He spent less time at his desk in the Interior Building and more with the preparators, in some instances taking part in actual production.

Organizational support allowed him this freedom. The Museum Branch was still a unit of the Natural History Division. As chief naturalist, John E. Doerr gave the museum program solid administrative backing. He trusted Burns and permitted him a free hand in professional matters. The Biology, Geology, and Interpretive branches that composed the rest of Doerr's division reflected his attitude and cooperated with the Museum Branch effectively.

A reorganization of the Washington Office following Director Newton B. Drury's resignation on March 31, 1951, made Arthur Demaray director, Conrad L. Wirth associate director, and Ronald Lee assistant director for research and interpretation. All three were park museum advocates. Lee, who had worked closely with the Museum Branch while chief historian, now held line authority over it through Doerr. Lee's successor as chief historian, Herbert E. Kahler, continued this cooperative relationship with Burns' branch. It was an auspicious time for park museums, even though the Korean War dominated public attention.

Among the four exhibit construction projects initiated in 1950 Ocmulgee received a measure of priority. The museum would be unusually large. It had to house the many artifacts recovered from a massive archeological investigation of an extensive, long-occupied site, and it was also expected to provide research facilities for the study of collections from sites throughout the southeastern states. A third of the structure, completed before the war, already sheltered specimens from other important digs. Enough exhibit space was needed to interpret with selected artifacts the Ocmulgee story that the archeologists had pieced together. Applying the principle that a park museum should have no more exhibits than necessary to interpret the park's features—its primary exhibits—Ocmulgee would still require fifty units, whereas such museums usually had fewer than 25.

The new construction carried out the prewar architectural concept in general. It produced a cast concrete building more akin to the creative architecture of the Tennessee Valley Authority than conventional park structures. With part of its lower story buried in a mound of earth, the

museum when finished gave visitors at least a subliminal impression of the site's ancient mound-top temples as well as a sweeping view over the adjacent remains. Frank Buffmire prepared imaginative layouts based on the prewar exhibit plan by John Ewers. Archeologist Charles Fairbanks from the park acted as special curator while the exhibits were in production. He selected the specimens to display, procured from Indian craftsmen reproductions of such perishable objects as burden baskets and atlatls for which secondary evidence survived, and did yeoman work to assure the accuracy of labels, illustrations, and models. To meet its target date the laboratory turned for the first time to an outside exhibit contractor for a few of the panel displays. Burns accompanied the laboratory crew that installed the exhibits in time for the museum opening on November 2, 1951.[19]

By then production of the Custer Battlefield exhibits assumed priority. In 1939 Congress had directed the secretary of war to build a museum there as a memorial to Custer and his men and to accept a valuable and appropriate collection of artifacts and documents bequeathed by Custer's widow.[20] It appropriated no funds for the purpose, however, and within a year the War Department transferred the battlefield to the Interior Department. When pressure for the museum resumed after the war, Congress provided $96,000 for its construction in the 1950 fiscal year, adding $31,200 in 1951 to prepare and install the exhibits.

Designed to fit unobtrusively into the sagebrush landscape, the building had a low profile and plain exterior. Inside it met museum requirements well with a practical exhibit room on the main floor and a study collection room with walk-in vault on the lower floor. Planning for the museum engaged the park and regional office along with the Museum Branch. Superintendent Edward S. Luce and his wife, Evelyn, had prepared a museum prospectus in 1947. Major Luce, a veteran of the 7th Cavalry and its dedicated historian, brought to it experience as a trooper, intimate familiarity with the terrain, and long study of the literature. His wife contributed intensive research in the documentary evidence and balanced his natural bias with cold fact. Both collaborated unstintingly with the Museum Branch throughout the project. Regional museum planner Harry Robinson not only worked on the exhibit plan but produced an illustrated guide to the museum as yet unmatched by any other park.[21]

Two aspects of the Custer museum particularly challenged Burns and his laboratory staff. One concerned the effective use of the rich collection of Custer artifacts. While the Museum Branch was determined to use these specimens to the fullest, the growing realization of responsibility for object conservation taxed the curators and preparators when it came to installing historic flags, uniforms, documents, and other environmentally sensitive materials. The second aspect involved the sequence in which the exhibits

Custer Battlefield National Monument Museum, 1952. Exhibit typical of Museum Branch design and production after World War II.

should tell the story. After much thought it was agreed to begin the presentation with the shocking climax. Succeeding exhibits would then attempt to unravel the mystery of what had happened to leave Custer and every man under his immediate command dead on the field of battle. This decision gave crucial importance to the diorama of Custer's Last Stand. It should depict the scene not as previous artists had imagined it, but as accurately as close analysis of all available evidence would permit. As a master of the medium Burns himself modeled the figure of Custer. The result and the installation as a whole brought him deserved satisfaction when the museum opened on June 25, 1952.

By that time the laboratory had completed its work on the Hawaii project. This had involved only seven exhibits, but distance complicated the task. The exhibits not only had to withstand shipment by land and water from Washington, they needed to correlate with other exhibits being produced in Hawaii. Upon arrival the park would install them in the headquarters building on the rim of Kilauea. Dealing with unfamiliar subject matter, the laboratory staff welcomed advice and guidance from Chief Naturalist John Doerr, who knew the park well. Funding came from Hui O Pele, the park's unique cooperating association.

The Federal Hall project entailed quite different problems. Museum Branch involvement with Federal Hall Memorial had begun soon after the Wall Street property became a Park Service responsibility in 1939. Burns

established a good working relationship with the Federal Hall Memorial Associates, who were developing a museum there without professional staffing. This patriotic organization sponsored by powerful and public-spirited interests in the Lower Manhattan business community was a welcome tenant in a historic building the Service could not then afford to restore and operate. Burns' aim was to minimize future curatorial or public relations difficulties that its mistakes might engender.

The building, whose vaults had once held much of the gold and silver validating the currency of the United States, was itself a distinguished architectural monument meriting preservation. It occupied the site of an older structure, Federal Hall, where George Washington had been inaugurated president and directed the organization of the national government under the Constitution. These events of the 1780s constituted the interpretive interests of the associates. But Federal Hall in its earlier form as colonial New York's city hall had also witnessed such significant events as the jailing and trial of John Peter Zenger for libeling the imperious colonial governor. Zenger's acquittal on the grounds that his printed statements were true became a landmark in establishing the freedom of the press. In September 1949 the Zenger Memorial Fund, formed by influential newspaper publishers, contracted with the Park Service to underwrite a Zenger Memorial Room at Federal Hall.[22]

The Zenger Room constituted an especially difficult assignment for the Museum Branch. The subject matter to be interpreted did not lend itself readily to museum treatment. Freedom of the press defied concrete visualization. Zenger's appearance was unknown, and no artifacts associated with him survived except copies of his newspaper. Nothing remained of the fabric of City Hall, and pictorial evidence proved scanty. The only known exhibitable specimen related to the trial was unavailable.[23] The room selected for the memorial presented further problems. Tall windows occupied much of two walls, two doors interrupted a third, and monolithic columns supported the ceiling. The exhibit installation would have to leave the stately architecture unimpaired.

The promoters of the memorial did not limit their participation to money. The elderly president of the fund, James Wright Brown, continued to suggest changes affecting the exhibit plan while the work progressed. Another proponent pressed for more emphasis on the role of Zenger's wife, whom he credited with maintaining publication of the newspaper during Zenger's incarceration. The fund also insisted that a New York illustrator named Cliff Young execute some of the exhibits. Burns consequently had to engage in time-consuming negotiations with well-meaning people operating outside their field of professional competence. On some points he could compromise, for example by spotlighting Mrs. Zenger in the jail

diorama and assigning two or three introductory illustrations to Young. Other proposals he felt obliged to resist.

Another factor augmented the tension. The location of the Zenger Memorial and its well-connected sponsorship meant that it would address a highly sophisticated, discriminating, critical public. None but the best possible exhibits would do.

While structural rehabilitation of the room proceeded, the Museum Branch began production. A special study by a Columbia University historian established the narrative basis for the exhibits. The plan that resulted called for three sizable painted illustrations to present information regarded as essential background: Zenger's arrival in New York as an immigrant boy, Governor William Cosby's autocratic attitude, and the local election that crystallized resistance. Four dioramas would highlight Zenger's role in the controversy and form the nucleus of the display. A few cases would show original issues of Zenger's newspaper, 18th-century tools of the printer's trade, and items concerning Andrew Hamilton, the prototypical Philadelphia lawyer who defended Zenger. Two verbal panels, one recognizing the jurors and the other the significance of their verdict, would provide a fitting conclusion.

Every aspect of the Zenger exhibits would tax laboratory skills, but the dioramas demanded the most time and effort. One showed Zenger at his press. Colonial Williamsburg's reconstructed print shop fortunately offered a convenient source of data. Burns, who determined to sculpture the figure of Zenger, discovered that the costumed demonstrator who operated the Williamsburg press resembled Zenger in age and ethnic background and used him as a model. Burns went on to sculpture the figure of Andrew Hamilton in the intricate diorama of the trial, a group requiring the laboratory curators to search out details of British courtroom procedure as practiced in the colonies. Problems of modeling in perspective loomed large for the diorama depicting Zenger's newspaper being burned by court order in front of City Hall. Both the building with its brick walls and the cobbled street had to recede convincingly into the background from wherever the viewer stood.

When the Zenger Memorial Room opened in April 1953, Burns could feel relief as well as satisfaction. The sponsors evidently were well pleased with their investment of nearly $50,000. As far as the Museum Branch could tell, the exhibits achieved their intended purpose. The interest and pleasure that visitors appeared to show suggested they were obtaining a heightened appreciation of one of their basic rights. The fact that a critic could later describe these and other exhibits at Federal Hall National Memorial as "without merit" pointed up a continuing problem of exhibit evaluation, to be considered subsequently.[24]

Ned J. Burns. Checking his miniature sculpture of John Peter Zenger for Federal Hall Memorial with his model, the Colonial Williamsburg printer (left). (Courtesy Colonial Williamsburg.)

The Zenger exhibits reflected a lifetime of skill and knowledge applied by one of the country's most respected museum workers. In a sense this assignment required Burns to carry to the extreme the sage observation of Hermon Bumpus that park museums should invert customary museum practice without upsetting it. The Zenger Memorial fittingly capped his career. Neither he nor his colleagues realized the extent to which his health faltered as the work progressed. Within five months of its completion he was bedridden; he died on October 12 at the age of 53.

During nearly two decades Burns made an immeasurable contribution to the park museum program. While the account so far has dealt mostly with his leadership in the development of exhibits, he defined professional policies and standards that guided all other aspects of park museums. His vigorous support strengthened interpretive efforts throughout the Park Service. His influence continued for at least as long as those who had worked with him remained on the job.

The four projects that dominated Museum Branch activity in 1950–53 did not encompass all the branch did. In 1953, for example, Federal Hall was among 15 parks for which the laboratory produced exhibits. When the

Park Service took over from the city of Philadelphia preservation and management of Independence Hall and associated structures in January 1951, it became responsible for the city-owned historical collections in these buildings. They comprised a large number of objects ranging widely in significance but including such national treasures as the Liberty Bell, the inkwell used by the signers of the Declaration of Independence, the "rising sun" chair from which Washington presided over the Constitutional Convention, and the historic portraits of the founding fathers.

Burns appreciated the necessity of establishing close curatorial supervision over the recording and care of these artifacts as well as their use in exhibits. The city would expect strict accountability, and the importance of many of the objects imposed an even greater obligation. Burns accordingly arranged the transfer of James Mulcahy from the laboratory staff to Independence National Historical Park as curator. He could count on Mulcahy to maintain faithful and intelligent watch over not only the safekeeping and care of the collections but also their exhibition during a critical period of the park's development.[25]

Before leaving for the Philadelphia assignment Mulcahy completed an unusual project. Director Demaray asked the Museum Branch to develop a display that might help solve a growing problem of littering in the parks. Mulcahy devised a trailside viewing box through which visitors might look at a scenic park feature. Ostensibly the contrivance would help a visitor focus attention on the inspiring view. Within the box, however, a representative assortment of litter provided a discordant foreground. Presumably this mild shock would induce the viewer to refrain from littering. Rangers at Shenandoah National Park observed visitors as they used a prototype. It did not work as intended: users debated whether or not the glass ends magnified the distant feature while scarcely noticing the interposed junk.[26]

The laboratory worked on other wayside exhibits during this period, each time trying not only to supply an immediate interpretive need but to increase the durability and graphic versatility of the medium. Experimentation that dated back to the wayside shrines Hermon Bumpus had conceived for Yellowstone some twenty years earlier proceeded along two principal lines. One led toward cheaply produced multiple copies so a park could easily replace a damaged display. The other sought to use tough materials and construction that would resist weathering and vandalism.

Following the latter path the branch produced two carefully encased waysides at this time. For Montezuma Castle National Monument, where continued erosion of the ruin by visitors threatened irreparable harm, the laboratory prepared a detailed scale model. Installed at the foot of the cliff, it supplemented the distant view of the original to which people might no longer climb. The second exhibit stood at Surrender Field in the Yorktown portion of Colonial National Historical Park. In spite of tight case

construction moisture tended to condense on the inside of the glass front. After the top official of the Pittsburgh Plate Glass Company visited the park and saw the problem, he wrote the director offering his company's help. The laboratory rebuilt the case with advice and materials from the manufacturer. Three inches of glass foam insulation on the back and sides combined with a dual-pane glass front did solve the condensation problem—until a vandal shot holes in the expensive assembly a few months after its reinstallation.

The Museum Branch continued work toward practical methods of displaying pictures, maps, charts, labels, and even objects outdoors. Its efforts culminated in the very durable and graphic cast aluminum markers designed by Frank Buffmire for the High Water Mark Trail at Gettysburg a decade later. Buffmire and his colleagues also developed effective waysides using plastic lamination, metalphoto, routed aluminum, and other techniques in various combinations.[27]

Innovation characterized another exhibit project in the busy start of the 1950s. A few months after Floyd LaFayette joined the Museum Branch staff as a curator in 1951, he volunteered to serve as planner, designer, and preparator for the Ochs Memorial exhibits. Being deeply involved in production for Ocmulgee and Custer Battlefield, the laboratory welcomed his unusual offer. The Ochs Memorial, an observation station museum built on Lookout Mountain in Chickamauga and Chattanooga National Military Park just before World War II, badly needed to have temporary displays replaced. LaFayette conceived and painted exceptionally graphic campaign and battle maps along with other creditable exhibits. The museum received its new installation in January 1952.[28]

When the government lease on the L Street garage terminated, the museum laboratory again had to search for new quarters. Burns skillfully parried an attempt to transfer the operation to a commercial structure acquired by Independence National Historical Park in Philadelphia, believing firmly that the Museum Branch should remain close to the director's office. Ultimately he selected the ground floor of one wing in Temporary Building S. Erected for a World War II agency, Tempo S was on the Mall across from the National Gallery of Art where the west wing of the National Air and Space Museum now stands. The laboratory would be midway between the Interior Department, where Burns had his office, and the Library of Congress, which the curators needed to use on an almost daily basis. It would be even closer to the National Archives and the Smithsonian museums, other vital sources of continual reference.

The move took place at the end of March 1953. A small room provided a convenient studio in which Burns worked much of the time that remained to him. Here he modeled his last diorama figures and made a start toward revising the out-of-print *Field Manual for Museums*. He hired a part-time

editor but other responsibilities left him little opportunity to use her aid. Tempo S gave the laboratory a good home for more than a decade, until pending demolition forced another move. No earlier or later quarters matched its convenience and spaciousness. The only notable difficulty encountered there involved thefts from the collection storeroom by a GSA night guard. On the verge of apprehension, he threw into the Potomac beyond retrieval a bugle and dirk intended for exhibition.

The new administration that took office in 1953 retained Director Conrad Wirth, who had succeeded Demaray at the end of 1951, but initiated a management survey that led to realignments within the Service. One of these placed Assistant Director Ronald Lee in charge of a newly designated Division of Interpretation composed of four branches: history, natural history, information, and museums. This sharpened the focus on interpretation as a primary Service function under strong leadership. As a secondary result the Museum Branch for the first time achieved the organizational status Carl Russell had sought for it in 1935. Heretofore it had been under the chief naturalist, although at least half its assignments required equally close collaboration with the chief historian. In practice, the excellent cooperation on museum matters established between Chief Historians Lee and Kahler and Chief Naturalists Russell and Doerr had reduced the difficulties in this arrangement to an inconsequential minimum.

Burns' death during the early stages of this reorganization necessitated some staff changes within the branch. In April 1954 Ralph Lewis succeeded Burns as branch chief. Frank Buffmire became assistant chief in May and Robert Scherer moved up to the position of chief preparator, or chief exhibits construction specialist as then titled.[29] They inherited a production program that would continue to tax the museum laboratory.

Several relatively small museum projects in the parks required exhibit planning and preparation. Only a few involved new buildings. Two of them, at Joshua Tree and Saguaro national monuments, brought the laboratory natural history subjects as a welcome change. Other projects called for new museums in restored or rehabilitated structures such as the Clover Hill Tavern at Appomattox, a lighthouse station outbuilding at Cape Hatteras, and additional rooms in the Old Courthouse at St. Louis. These encountered difficulties typical of adaptive use but also presented their share of curatorial and conservation problems. A well-meaning park supporter at Cape Hatteras secured donations for the little Museum of the Sea with the promise that the objects would never leave the Outer Banks, an especially hazardous environment for many artifacts. The Museum Branch consequently had to persuade donors to allow their temporary removal to Washington for preservative treatment and protective mounting in the laboratory. The pending projects also included replacement of stopgap installations that did not meet Service standards at Mammoth Cave

Museum Laboratory in Tempo S, 1955. Museum Branch chief Ralph Lewis, Director Conrad Wirth, and Interpretation Division chief Ronald Lee examine Indian riding accouterments.

and Oconaluftee in Great Smoky Mountains. In carrying out this core program the laboratory installed seven park museums or exhibit rooms between March 1954 and April 1955 and shipped the exhibits for two more to far Southwestern areas.[30]

Perhaps the most innovative among them was the new wing for the Chickamauga museum. Built specifically to house the Claud E. Fuller collection, the Chickamauga addition demanded the adaptation of park museum theory to an atypical situation. The collection had its greatest value as a study series. It comprised several hundred weapons and accessories selected to illustrate the development of American military firearms. A system of visible study storage would serve the primary needs of scholars and also those of interested laymen and casual visitors. The Museum Branch equipped the room with continuous runs of wall cases using factory-built, dust-tight extruded aluminum and plate glass construction with external lighting. It specified higher-than-usual bases to bring every specimen into convenient viewing range. Case fronts with hinges and locks provided both security and practical access when a legitimate student needed to remove a gun for closer examination. To minimize the need for this the laboratory mounted each gun so its whole length and most diagnostic parts were in plain sight. The installation kept the collection in

synoptic order with individual specimen and category labels of display quality. The laboratory also supplied an examining table with padded top, special lights, measuring instruments, and a magnifying glass, but no tools that might be used to disassemble any gun parts.

While concentrating as much as possible on Park Service museum exhibits, the laboratory found it necessary to undertake additional assignments. Parks wanted graphic displays to supplement manned information desks by providing answers to common questions. The Museum Branch viewed informational displays, like those with propaganda intent, as sharply distinct from museum exhibits. The peculiar value of the latter depended on public confidence in their integrity. To avoid eroding this confidence the branch tried quite successfully to keep a degree of physical separation between museum exhibits and other types of display.

The superintendent of San Juan National Historic Site in Puerto Rico asked for help in providing orientation displays to equip a temporary visitor reception building at El Morro. He assured the Museum Branch that he could easily get the work done locally if the laboratory would provide on-site guidance. Frank Buffmire went to the park and laid out a series of attractive bilingual units that matched the superintendent's wishes. Then he discovered that the superintendent had merely assumed he could find craftsmen to carry out the designs. After an arduous search Buffmire located one carpenter whose shop was his back yard. With such meager help he got the panels constructed and painted, executed the graphics and lettering, and mounted the panels in place. While Buffmire's work assured the quality of the exhibits, the project underlined the economy and efficiency of production in the central laboratory.[31]

A year later, in the summer of 1955, the branch cooperated on an experiment that required another set of informational displays. Parks charging entrance fees often experienced bottlenecks at their entrance stations as drivers asked questions. One proposed solution would locate an information station with adequate parking close inside the entrance. To test the idea Yellowstone placed a portable building for this purpose at its west entrance. The laboratory prepared colorful displays answering visitors' principal questions. In the end, the experiment did less to test the potential of the displays than to demonstrate the unwillingness of visitors to make a second stop so soon after entering the park.[32]

The Museum Branch continued to accept occasional outside requests for exhibit design and construction on a reimbursable basis. It was asked to do the exhibits for a new museum in the Prehistoric Indian Mounds State Park at Marksville, Louisiana. Floyd LaFayette guided this job through to completion, establishing excellent working relationships with Louisiana State Parks director William Wells, who later became a Park Service official, and archeologist John A. Ford of the American Museum of Natural

History, who served as curatorial expert. Installation of these exhibits in February 1954 led to a second allotment of $10,000 in state funds for additional work on the Marksville museum. Carnifex Ferry State Park in West Virginia also obtained museum exhibits designed and prepared by the laboratory, this work extending from mid-1954 into early 1956. From the Marine Corps came a request in 1954 to prepare a diorama as part of a special exhibition on naval history in the National Museum's Arts and Industries Building. The rather complex group illustrated in miniature the latest tactical methods for a combined amphibious and airborne assault on a fortified beach. Again satisfaction brought more work: the Corps ordered eight copies to circulate as traveling exhibits.

For a new hall of American Indian ethnology the National Museum contracted with the laboratory to prepare a small diorama showing the interior of a kiva. Before its completion in early 1955 the museum provided $2,000 more for a second group to depict an Inca farming scene. The laboratory's newest preparator, Russell J. Hendrickson, painted the background for it with a fresh and expert touch. Other reimbursable projects during 1955 included updating the National Capital Park and Planning Commission's large model of central Washington, preparation of the Interior Department's portion of a major federal traveling show, "The American Dream," that circulated to department stores in fifty cities, and a set of attractive botanical panels Buffmire painted for the Garden Club of America's national headquarters. Installation of exhibits prepared for the St. Augustine Historical Society in April 1956 and of the second Marksville unit in July allowed the branch again to concentrate its production resources on national park museums.[33]

When the 1955 fiscal year began, the Museum Branch faced what seemed then a very heavy but promising schedule. Congress had appropriated funds for four new park museums. One would serve Carlsbad Caverns, two would supply pressing needs at Colonial National Historical Park, and the fourth would replace dangerously combustible and inadequate facilities for Grand Canyon. The state of North Carolina had already provided money for the Park Service to build a museum beside the Blue Ridge Parkway.[34] The branch would need to keep pace with architectural planning and construction on all these buildings, but the Blue Ridge project had the earliest completion date.

North Carolina wanted to interpret its mineral resources to the public. In return for initial funding the Service undertook to develop and operate the Museum of North Carolina Minerals as a focal point of interest along the parkway. The Museum Branch planned exhibits on the minerals occurring in North Carolina that were or had been important in the state's economy. Specimens supported by graphics would show each mineral, tell

something of its occurrence, extraction, and processing, and illustrate its uses.

Floyd LaFayette, who played a leading role throughout the project, developed the layouts with strong curatorial support from Bennett T. Gale, geologist in the Natural History Branch. When they presented the plan to a sponsoring group of North Carolinians, the response was distinctly unfavorable. Members of the group were ardent mineral collectors who had envisioned the museum as an array of fine specimens displayed for their aesthetic appeal. The plan included only a few such exhibits but called for an adjacent study collection room equipped with well-filled specimen cabinets, maps of mineral sites, and reference books as a rendezvous for students and collectors. The Museum Branch argued the merits of its concept and Ben Gale persuaded the state to accept it. The museum opened in June 1955.[35] Although mineral collectors were not wholly reconciled, the study collection room received considerable use until staff cuts reduced its availability.

Congressional appropriation for the Grand Canyon museum marked the culmination of Louis Schellbach's long, determined effort to persuade those in authority that the park's rich collections constituted a resource too valuable to keep in an old frame schoolhouse. Schellbach had conceived concrete plans for the museum. He knew just where he wanted it and had many ideas for its interpretive content. At the same time, the Service reached a farsighted decision to divert future development from the canyon rim, upon which too many structures already intruded. The museum would be part of the new scheme. The change of location disappointed Schellbach so deeply that he lost heart for the enterprise, leaving its planning largely in the hands of the Museum Branch by default.

Design and Construction chief Tom Vint visited Grand Canyon in July 1954 to go over the proposal as it affected the museum. Cecil Doty, architect for the museum, accompanied Vint to the conference and began preliminary floor plans on the spot. Characteristically Vint also included Ralph Lewis in the party to ensure close collaboration between architect and museum planners from the start.[36] Museum Branch representation helped to make certain that the building included a large, secure room of fire-resistive construction for the study collection as well as suitable exhibit space.

Exhibit planning, which began in earnest a year later, marked a turning point in Museum Branch practice. Before World War II, it may be recalled, curators prepared the entire exhibit plans including layouts, then turned the completed specifications over to the preparators for production. In the intimate working conditions of the postwar laboratory, curators and artists tended to consult each other at earlier stages. Outside the Park Service such innovative installations as the Warburg Hall at the American Museum of

Natural History exemplified a contemporaneous inclination among museums to place more emphasis on design. A continuing debate developed over the respective roles of curator and designer, fueled by a perception that professional designers were insensitive to the scholarly value of museum objects.

With the Grand Canyon plan as its subject, the Museum Branch approached this problem empirically by a deliberate experiment in teamwork. Lewis went to the park in September 1955 to gather data and plot the story line. Two weeks later Buffmire joined him at the park as designer. Together they worked out the exhibit plan in about two weeks of concentrated effort, one proposing content and drafting label copy while the other developed layouts that seemed to communicate the ideas intended. As the plan grew, each reacted constructively to the other's concepts.[37] The experience convinced both men that curator/designer exhibit planning teams could increase the efficiency of the process and raise the quality of the product. Execution of the Grand Canyon plan typified park museum practice under the postwar Museum Branch. The museum presented subject matter selected to meet criteria of significance rather than assumed popular interest. The presentation was basically cognitive, on the assumption that public enjoyment of the park must arise largely out of understanding. Affective aspects of the Grand Canyon experience also received considerable attention, although the Service was still groping in the realm of aesthetic interpretation. One exhibit, for example, concerned the changing moods of the canyon and the necessity of taking time to observe them. Paintings and prints by several distinguished artists hung strategically in the exhibit room, illustrating efforts to reduce the vast complexity of the canyon scene into comprehensible scope. Quotations from Henry Van Dyke's poetic tribute to the Grand Canyon provided a connecting thread in the exhibit sequence. The exhibits followed an essentially chronological flow without sharp breaks between such traditional subject matter fields as geology, biology, anthropology, and history. Circulation through the succession was enhanced, but not forced.

The museum retained the interpretive theme of Time–Movement–Change originally proposed for the park by John C. Merriam and aimed to reinforce the still-effective Yavapai Observation Station rather than supersede or compete with it. Specimens provided prime evidence for much of the story. A series of six units represented something of a tour de force in this regard. Three small dioramas pictured widely different local habitats deduced from the geologic record: a sea bottom, a swamp, and a desert, each containing models of prehistoric life forms. What was unusual was that all the models in each group represented species whose fossils had been found close enough together to suggest they had lived in relatively close

association. An exhibit case flanking each diorama displayed the fossils and rocks that supported the conclusions depicted.

Technical aspects of the Grand Canyon installation also illustrated Museum Branch practice well. The windowless walls of the exhibit space protected all specimens from direct exposure to sunlight, but visitors could see token daylight from practically every point within the room by looking back toward the lobby or ahead to the patio. An installation crew from the laboratory aided by park staff erected furred walls into which the dust-tight, factory-built exhibit cases as well as the dioramas fitted. Case dimensions kept all specimens and labels within optimal viewing range. All exhibit lighting, selected for minimal heat and ultraviolet emission, was external to the cases. One display unit invited visitors to test the hardness of the stone that the eroding river had cut so deeply. Another reproduced the roar of the rapids to emphasize the river's power because many visitors would see the river only from the canyon rim.[38]

The same technical considerations of specimen security and care, convenience and effectiveness of visitor use, durability, and production economy guided the development of the Jamestown and Yorktown museums for Colonial National Historical Park, which were dedicated several weeks before the Grand Canyon museum opened in June 1957. The two Colonial projects developed in an especially stimulating milieu. Both museums had exceptionally good collections on which to base exhibits. Jean (Pinky) Harrington's archeological work in the late 1930s had given Jamestown the fullest representation of 17th-century colonial material culture of any site in the country, and renewed excavations under John Cotter in the mid-1950s were making important additions to the collection. Yorktown also had extensive artifactual evidence obtained from archeological studies of the field fortifications and other sites, including pioneering underwater archeology among sunken British warships in the York River. Recent acquisitions included such prime specimens as portions of tents General Washington had used at the siege, battle flags surrendered by British and Hessian troops, and a splendid early model of one of the blockading French ships. To supplement many of the excavated fragments at both Jamestown and Yorktown, Harold Peterson succeeded in procuring intact 17th-century examples matching the remnants of arms, armor, tools, utensils, and other articles chosen for display. Superintendent Stanley Abbott's active, innovative mind continually forced those working on the interpretive developments to review their own ideas critically and defend or revise them.[39]

The two museums formed part of a complex, coordinated scheme to mark the 350th anniversary of the first permanent British foothold in North America. The state of Virginia had under simultaneous development the Jamestown Festival Park, just upstream from the entrance to the Jamestown

section of the national park. The Festival Park would contain two museums and feature full-scale reconstructions of James Fort, a Powhatan Indian village, and the three ships that had brought the first English settlers. Colonial Williamsburg prepared for the anniversary especially by erecting its new Information Center, containing two theaters of advanced design to show a motion picture intended as the principal interpretive introduction to a Williamsburg visit. This film was costing more than both Park Service museums.

All three agencies cooperated to achieve a coordinated goal and meet a single deadline. Their respective planners and production workers could not avoid some friendly rivalry, for the same public would visit all the new facilities and could be expected to compare them. Although each agency employed a variety of interpretive media including museum exhibits, the state park emphasized living history techniques in the reconstructed fort, village, and ships; Colonial Williamsburg its strong system of guided tours featuring refurnished historic buildings splendidly introduced by the new film; and the Park Service the carefully preserved integrity of its historic sites for which the museums supplied the primary background interpretation. The Jamestown and Yorktown museum buildings did set a precedent in the Service by including respectable auditoriums with suitably equipped projection rooms. These followed the trend set by Williamsburg but reflected even more the growing desire among Service interpreters to make better use of audiovisual media.[40]

The workload imposed by the 1955 fiscal year program required the Museum Branch to hire more preparators. Several of those taken on for the 1950 projects had left. The laboratory had replaced one of them with Charles W. Dreyer, who had worked for years at the Naval Observatory repairing navigational instruments. He proved a very skillful, patient modeler of miniature weapons for dioramas and a fabricator of fine specimen mounts. Another replacement, Daniel J. Hadley, left just as the 1955 projects got into high gear. Selecting talent for the new program began in December 1954 when William A. Smith transferred from the Army Map Service. He proved to be a good diorama sculptor but also mastered the newest casting techniques, much to the benefit of the laboratory. Russell Hendrickson entered on duty in February 1955 as an accomplished artist. The Service could not retain him long at the time, but he returned later to make a significant contribution to park museum development.[41]

Staff expansion continued with the hiring of seven preparators in late 1955 and early 1956. Frank Spagnolo followed Smith from the Army Map Service and remained with the laboratory for the rest of his career. Paul Enten proved to have less to contribute and did not stay long. Peder Kitti came after painting habitat backgrounds for the new bird hall in the

National Museum. He served ably, particularly as a dioramist, until his retirement in 1979. Nelson A. Tinney assisted Willie Liggan with the increasing load of label lettering for several years. The next recruit was an exhibit worker, Edward W. Normandin, who assisted other preparators in routine production tasks. Margery Updegraff, an experienced exhibit artist, transferred from the Bureau of Reclamation to become the principal producer of illustrations, maps, charts, and other two-dimensional graphic elements needed to supplement exhibited specimens. Marilyn Biskin, also hired in February 1956, shared these assignments with her.[42]

Museums in Mission 66

Mission 66, a boldly conceived and intensively planned ten-year program, aimed to avert a crisis. It would provide the developments urgently needed if the national parks, already suffering severely from overuse, were to continue to fulfill their statutory but contradictory obligations of preservation and public enjoyment. Public use of the parks was growing at an alarming rate and would exceed the planners' estimates for the decade ahead. In this situation museums were among the many factors that could help save the parks.

Good museums played a double role. They contributed to visitors' understanding and therefore enjoyment of a park. And visitors who understood and appreciated the significance of park features tended to treat them protectively.[43] The nature of the problem, however, led Mission 66 planners to think in terms of a facility to serve a broader spectrum of visitor needs than previously associated with museums.

With the advent of PWA-funded administration/museum buildings in historical areas, most park museums shared space in multipurpose structures. The planners for Mission 66 built on this precedent. Visitors would find the new type of facility without difficulty thanks to more emphasis on strategically planned siting. It would recognize their needs as travelers and welcome them with restrooms and drinking fountains. It would provide helpful answers to their most pressing questions: where to eat and sleep, how to reach the park's prime features, how to plan their available time effectively. The building would therefore require a suitably spacious lobby with an efficiently staffed information desk as well as clear maps, schedules, and self-service orientation or information displays. It would have an auditorium or smaller room in which a relatively brief audiovisual presentation would either suggest what to see and do in the park or evoke an emotional anticipation toward important park themes. The museum exhibit room would offer a more cognitive introduction to the park story but also aim to send visitors quickly out into the park better prepared to understand and appreciate it. Those with more time and special interests

would usually find here the museum study collection, the park library, and the offices or workrooms where they might consult other staff members.

While in earlier multiple-use situations the building was ordinarily referred to as the park museum, the planners wanted to call the new mix by a name that would make its service function crystal clear to the public. After some debate consensus favored "visitor center." The prompt retroactive application of the term to the pre-Mission 66 projects at Grand Canyon, Jamestown, Yorktown, and elsewhere demonstrated its general acceptance.[44]

Most parks wanted one or more visitor centers as part of their Mission 66 development. By the time the program won administration and congressional approval in early 1956, the Museum Branch knew that it would have to plan and prepare approximately one hundred new museums within the next decade, an average of about ten per year. While welcoming the challenge, the branch feared that eagerness for modern visitor facilities might lead some parks to request unneeded museums. It therefore urged Mission 66 planners to propose museums only where necessary to preserve original objects important to a park's mission or essential to help visitors understand a park.[45]

The projected rate of development obviously exceeded the capacity of the existing staff of curators and preparators, but it seemed unlikely that the workload would continue after Mission 66. The Museum Branch therefore decided to avoid building up a large force that would have to be cut back when Mission 66 ended. It would limit expansion as far as possible to the number of positions it would then need to service the increased number of park museums and take care of normal growth.[46] Meanwhile it would augment production when necessary by contracting for exhibit preparation, a method the laboratory had used sparingly.

Before work could proceed on any Mission 66 exhibits, their planning demanded immediate attention. With the successful application of a team approach at Grand Canyon fresh in mind the branch acted quickly to organize three exhibit planning teams, each composed of a curator and a designer. The curator would have the academic background to wrestle with the complexities of subject matter, sort out the significant ideas, and express them in simple language. He would also have firsthand knowledge of visitor behavior in parks based on solid experience as an interpreter, or at least comparable knowledge from work in a museum. The designer would contribute mastery of form and color but also add important insights into content and communicative strategies. The team would spend enough time in a park to become familiar with its features and constraints as well as to obtain the input of the local staff. Frank Buffmire had already developed a format for exhibit plans that gave a park superintendent and other reviewers a clear picture of what the proposed exhibits would look like and

say. It matched the park master plan in sheet size and contained a large colored sketch of each case and panel along with complete content specifications including label copy.

The three exhibit planning teams, referred to as the eastern, western, and history teams without circumscribing their scope by these titles, began work even before completely staffed. Robert L. Barrel and Myron D. Sutton, both experienced and articulate park naturalists, entered on duty in March 1956 as the curatorial members of the western and eastern teams respectively. At the same time the branch borrowed temporarily Albert C. Manucy, the scholarly and versatile park historian at Castillo de San Marcos National Monument, as curator for the history team. Before returning to his park in October he made outstanding contributions to four exhibit plans, including two particularly sensitive ones. Sutton received a design partner for the eastern team in April when the branch succeeded in recruiting Edward J. Bierly, a talented artist who specialized in wildlife subjects. The laboratory lent designers to the other two teams. Russell Hendrickson collaborated with Barrel on the western team's first job, then worked with Manucy to finish one important plan. Floyd LaFayette joined Barrel for the next two western ones. In June the branch hired a new designer, Hiram R. Haggett, for the history team. All three teams attacked their assignments with skill, imagination, and energy. Each submitted its first completed plan in May and started on the next without slackening pace.[47] They would continue to function admirably through various changes in personnel until they had met the exhibit planning needs of Mission 66.

Work on an exhibit planning team made severe demands. It entailed much time in the field and pressure to keep up with construction schedules. The teams were expected to propose exhibits of endless variety and originality while maintaining existing standards that tended to limit change. Not surprisingly, planners came and went. Alan E. Kent, curator of photographic collections at the Wisconsin State Historical Society, took over Manucy's post with the history team in December 1956. After about five years he was promoted to a supervisory position in the Museum Branch. Following a reorganization in 1964 he went on to exercise intellectual leadership of Service-wide interpretive planning. A veteran park historian, John F. Luzader, took his place with the team for the remainder of the Mission 66 program. Haggett left the history team in August 1958 for a curatorship at the United States Air Force Museum under development at Dayton, Ohio. As his replacement Kent welcomed Daniel D. Feaser, promoted from an exhibit preparation position in the laboratory. A wildlife painter with excellent design sense, Feaser served ably with Kent and then Luzader until the team's work was finished.[48]

The eastern team, which addressed its assignments with a constructively critical stance toward accepted practice, had Bierly as the design member throughout the program. Sutton became an instructor at the Service's new intake training center in August 1959. Marc Sagan from the Grand Canyon naturalist staff succeeded him in October and worked with Bierly until transferring to Region One in February 1962. He was followed by Earl W. Estes, park naturalist at Mount Rainier. Estes helped tackle some important historical as well as natural history plans including one for Appomattox Court House, which had to be fitted into a reconstructed building that provided far from ideal museum space.[49]

Robert Barrel transferred the base of operations for the western team to San Francisco in August 1956 in preparation for reestablishing a western museum laboratory. He worked with borrowed designers, as noted above, until the appointment of John W. Jenkins that October. Barrel and Jenkins collaborated on the difficult plan for the Quarry visitor center at Dinosaur National Monument before the new laboratory demanded Jenkins' full attention. Raymond S. Price, who joined the laboratory in Washington as a preparator in November 1956, followed Jenkins as the western team designer in May 1957. Like Sutton, Barrel received a tempting offer in August 1959 and left to become naturalist for Hawaii National Park. Leland J. Abel, an archeologist serving as Region Four curator in San Francisco, replaced him promptly. Because of an extended special assignment that earned a unit award, the Abel-Price team could not keep up with needed exhibit plans, and Jenkins hired another designer, Herbert F. Martin, in July 1961. After Abel transferred to a park archeologist position in February 1962, Jenkins recruited two planning curators as replacements: Paul F. Spangle, a naturalist, and Gilbert R. Wenger, an archeologist. This gave the western laboratory two teams, Price and Martin pairing interchangeably with Spangle and Wenger. Even their best efforts could not meet the workload in the later years of Mission 66, and Jenkins obtained two more exhibit designers: Gerald Ober from the Jefferson National Expansion Memorial in January 1963 and David Ichelson from his position as laboratory shop supervisor that October.[50]

By the end of the ten-year program the planning teams, east and west, had turned out an impressive volume of carefully and imaginatively conceived plans, not all of them for park museums. Within the first year management saw the value of dovetailing wayside interpretation with museum content, so the Museum Branch assigned planning for both to the teams. Thus Sutton and Bierly devised the exhibits not only for the new visitor center at Flamingo in Everglades National Park but for the series of interpretive stops Superintendent Daniel B. Beard had proposed along the road leading to it. Management could not resist using the teams' skills to plan temporary exhibitions such as those for a governors' conference, a

World Forestry Congress, and a Boy Scout Jamboree in 1960. Team planners were lent to Mississippi, North Carolina, and the Army to aid in museum development projects. Bierly's broad talents led UNESCO to borrow him as an expert to assist the Rhodesian government in planning and developing its museums. Spangle interrupted his regular work with the western teams for a three-month park planning assignment in Jordan and later served on the team sent back to Jordan and Turkey.

The history team had a share of these extra duties and carried another burden. Because the Civil War Centennial fell within the Mission 66 period and the Park Service had most of the war's major battlefields, the team faced the need to plan exhibits for a daunting succession of battlefield museums. Similarity in the material culture and in the general nature of story content taxed the ingenuity of both curator and designer to make each of these museums unique and specific to its place yet clearly related to the others. Watching visitors use the museum accompanying the Gettysburg cyclorama left little doubt that the history team served the centennial well. For some of the later projects the eastern team shared this load and demonstrated its capability in planning Civil War exhibits.

The sheer number of exhibit plans the three teams produced made their adequate review a problem in itself. To ensure that they merited approval, Ronald Lee instituted a multidisciplinary scrutiny of each. Beginning in February 1957 he brought to the Museum Branch as often as necessary a delegation of interpretive and subject matter experts from the History and Natural History branches. A Museum Branch representative explained each proposal in detail, after which open discussion led either to agreement or a call for revision. When Lee became satisfied as to the accuracy, feasibility, and likely effectiveness of the exhibits proposed, he defended them at the director's plan review. During the first five months of this procedure twenty exhibit plans along with thirty museum prospectuses passed such careful screening.[51]

Good museums depended as much as ever on cooperation between museum specialists and architects. The visitor center concept involved enough fresh problems to make close collaboration even more important. Fully appreciating this, Lee was instrumental in scheduling two conferences among Service interpreters, museum specialists, and architects early in the program. The first met at the Eastern Office of Design and Construction, Philadelphia, for a week in November 1957. The conferees discussed visitor centers currently on the drawing boards, debating details and general concepts. A similar meeting at the Western Office of Design and Construction, San Francisco, followed in February 1958. The combined report clarified thinking on visitor center functions and design factors. Lee and Chief Architect Dick Sutton submitted it promptly to Director Wirth with a list of recommendations.[52]

One of these addressed the principal point of contention at the time between architects and curators. The architects pleaded the merits of open design. While this trend influenced plans for many types of structures, it seemed especially important that visitors entering one of the new park centers not lose contact with the outdoors. Curators heartily approved of openness for lobbies and many other interior spaces, but they stressed the need for control of light in rooms containing museum specimens. Lee and Sutton agreed on this, and most Mission 66 visitor centers followed suit. Some architects continued to oppose the judgment that concern for specimen conservation should outweigh the visual attractiveness of window-walled museums, however. They dubbed exhibit rooms that met museum lighting standards "black boxes" and later found allies in the exhibit design field.

During 1956 the Museum Branch continued to add artists and craftsmen to its laboratory staff to fill specific needs. John Babyak, a former preparator at the American Museum of Natural History who possessed useful experience as a rigger, reported in April. Marion B. Stewart joined the staff as an artist in June and worked principally on preparation. In June also the laboratory hired Alfred Lloyd Lillie, a young sculptor fresh from art school whose talent far exceeded the paper qualifications that determined his pay. He served well for nearly a year before undertaking advanced studies. Later he fulfilled special sculpturing assignments under a "when actually employed" appointment and returned to full-time status for a while before joining the Boston University art faculty.

Frank Phillips, a park maintenance employee whose workmanship and cooperativeness had impressed the installation crew at Custer Battlefield, transferred to the laboratory in July and took on much of the exhibit case and panel construction. After assuming supervisory responsibility in 1964, he proved a hard taskmaster and supported changing design trends that deemphasized concern for exhibit maintenance and specimen protection. Diligent, practical, resourceful, and accurate, he remained with the laboratory until retiring in the mid-1970s. In August came Dan Feaser, who served as a skilled exhibit artist until promoted to the history planning team, and Arlie P. O'Meara, who for the rest of his career operated the spray booth—a necessary task requiring a special kind of reliability along with a good eye and steady hand. In October John A. Segeren was hired as a model maker. He transferred to the western laboratory in September 1958 and returned when it closed, becoming most active as a wood carver. Two more artists engaged in November rounded out the preparation staff: Richard H. Jansen, a mature, Wisconsin-trained painter, and Ray Price.

Only a few later changes occurred in the laboratory's production crew during Mission 66. In June 1958 Arlton C. Murray, an experienced preparator, was assigned from other duties to work on exhibits. Kenneth

Dreyer replaced his father as model maker in July 1960. During summer vacations earlier in the program a high school shop teacher, Clair H. Younkin, provided valuable temporary help.[53]

Also essential to the task was increased curatorial support. Mission 66 museums, like their predecessors, each had a story to tell and set out to exhibit the specimens and graphics that would tell it most effectively. The exhibit plan generated a want list to accomplish this. Whether or not the objects needed were already in the park collection had little bearing on their selection. If they were not, Museum Branch curators faced the problem of finding and acquiring them. Efficient exhibit production demanded that the specimens be in the laboratory on schedule, imposing a continual succession of deadlines.

To carry the main burden of search and acquisition the branch hired a new curator in July 1956. Joseph Fred Winkler, a geographer well recommended by his colleagues at the National Archives, combined skill in evaluating and employing reference resources with systematic, tenacious application. When one plan called for a specimen of the extinct passenger pigeon, for example, he obtained a fine mount on time and without fuss. Other staff curators assisted when they could, but Winkler bore the brunt of supplying the preparators with the specimens for exhibition. In July 1956 also Laurence Cone relinquished his duties as an exhibits construction specialist to assist with the curatorial workload. Besides helping with acquisitions, he acted as laboratory photographer and organized the slide files until departing in August 1957 to become curator of the Southern Plains Indian Museum. When the forthcoming Civil War Centennial created a special need for an expert on the war and its material culture, Lee A. Wallace transferred in December 1957 from his position as park historian at Chickamauga and Chattanooga National Military Park to the Museum Branch as exhibit research historian. He provided a continual flow of factual and pictorial data to meet innumerable exhibit needs during the centennial program.[54]

Tempo S did not have vacant rooms suitable for shop use when the need to expand arose. In the summer of 1957 the General Services Administration rented the Park Service a second floor area in another temporary building across Independence Avenue for a laboratory annex. A more convenient location, the rear portion of a wing in Tempo S adjacent to the main laboratory, soon replaced it. GSA also agreed to air condition the laboratory space in Tempo S, completing the installation in June 1958. Although the system could not provide the stable conditions now recommended for museum environments, it greatly facilitated exhibit production during Washington's muggy summers. The Museum Branch later expanded into three front offices as well and borrowed vacant rooms on occasion to serve special needs.

John W. Jenkins. Chief, Western Museum Laboratory.

It became apparent at the outset that museum development under Mission 66 would justify reestablishing the Western Museum Laboratory. Besides boosting exhibit production, a laboratory in the West would reduce the costly and hazardous transcontinental shipment of specimens and exhibits. Museum staff could also work much more closely with architects in the Western Office of Design and Construction and with many of the client parks. Setting up and managing the new facility would require someone with broadly based museum experience not easily obtained within the Park Service. The job would demand strong leadership yet willing support of the Service's established museum standards and curatorial policies.

The branch had by chance hired a number of able employees educated or trained in Wisconsin, including Floyd LaFayette and Harold Peterson. They urged the selection of John Jenkins, whom they knew and respected as chief curator of the Wisconsin State Historical Society. Jenkins responded with interest to a March 1956 letter that referred primarily to work on the western planning team with only a suggestion of larger prospects. From this start the Museum Branch secured the establishment of two positions, to be filled consecutively. The first permitted Jenkins' appointment as designer on the exhibit planning team in San Francisco while he also laid the groundwork for the projected laboratory. He took up these duties in October 1956. His advancement to the second position as chief of the Western Museum Laboratory followed in September 1957.[55]

The laboratory was still far from a functioning reality. The Service proposed to house it in the old United States Mint, conveniently located in downtown San Francisco. This massive and somewhat derelict structure had briefly provided the last home for the prewar laboratory. Now it was the focus of controversy between preservationists who wanted to save the building and developers who hoped to demolish it. Locating the laboratory in the Old Mint gave the preservationists a toehold, but its fate remained unsure throughout this occupancy.

GSA assigned basement space in the building for laboratory use on September 28, 1957. Assistant Regional Director Herbert Maier, who thirty years before had so ably designed and supervised construction of park museums for Yosemite and Yellowstone, helped expedite preparation of the space. Work got underway to adapt the old vaults and narrow corridors for laboratory use in January 1958, with the Service footing the bill. Jenkins did not wait for the contractor to finish. On March 17 he started moving in and setting up equipment, and exhibit production began in earnest a week later.[56]

The Washington Office established eleven permanent positions for the western laboratory in September and October 1957. These would provide Jenkins with an office staff of one clerk-stenographer and an administrative assistant, a curator to function as Winkler did in the eastern laboratory, four exhibits construction specialists, and four exhibits workers. Jenkins requested the transfer of David Lillis from the eastern laboratory to procure equipment and supplies for the preparators. Until Lillis arrived in December Ray Price, whose position on the planning team now came under the new laboratory, saw to these chores. In November D. Robert Hakala, a naturalist who had demonstrated his intelligence and energy in National Capital Parks, reported as laboratory curator. Laura D. Obwald moved from the Region Four Office as secretary and C. Kenneth Kegler as administrative assistant in December. Six preparators arrived in March 1958. John Babyak transferred from the eastern laboratory. William D. Berry, a first-class wildlife artist, and Bernard Perry, another able artist, gave the laboratory a solid basis particularly for graphics. Marian S. R. Fischer and Jean H. Rodeck (Swearingen) assisted them as exhibits workers. Less experienced than most of the others, Edward LeRoy Vella brought artistic training and enthusiasm. The crew plunged into building exhibits for the unique Quarry visitor center at Dinosaur National Monument, scheduled for dedication June 1. In less than ten weeks twelve creditable exhibits were ready for installation.[57]

The laboratory's preparation staff grew modestly during the remaining years of Mission 66. In July 1958 John Segeren, model maker in the eastern laboratory, replaced Babyak upon the latter's return to Washington. That October Jenkins hired a promising young art student, Dick T. Morishigi, who advanced steadily and became the shop supervisor in 1963. Two other preparators entered on duty in late 1958. Clair Younkin, who had proved his worth during summers at the eastern laboratory, and Reginald W. Butcher, a reliable and skillful exhibits worker, enhanced production throughout the program. Jenkins added three more to the staff in 1961: David Ichelson, who began as shop supervisor, Francisco G. Garcia, an exhibits worker, and Herbert Carey, a 65-year-old illustrator. In October

1962 Joseph H. Rockwell transferred from a maintenance job at Death Valley National Monument to become an able and productive illustrator.[58]

As the number and variety of exhibits under construction increased, so did demands on the staff curator. The lead position changed hands three times during Mission 66 and a fourth time soon after as each incumbent accepted offers for professional advancement. Robert Hakala carried the load ably until January 1962, when he transferred to the regional office as a park planner. Richard M. Howard, archeologist at Canyon de Chelly National Monument, then performed the arduous duties for two years before moving back to a field archeology position at Mesa Verde National Park. In February 1964 Edward D. Jahns, also an archeologist, left Ocmulgee National Monument to replace him. Jahns stayed until May 1967, when the Western Region asked him to reactivate the regional curatorship vacated by Leland Abel in 1959. Vernon C. Tancil from the Independence National Historical Park curatorial staff filled the critical position thereafter until the laboratory closed.[59]

These men could not supply the need unaided. Jean Rodeck switched from the preparation staff to become an assistant curator under Hakala during 1960, and John B. Johnson held the job for most of the following year. In 1962 Jenkins tried to fill the gap by hiring an experienced curator, Sally Johnson Ketcham, on a when-actually-employed status, but she found that growing family responsibilities made the arrangement impractical. Thereafter he hired a succession of bright, energetic novices, including several scions of Park Service employees, as temporary curatorial assistants.[60]

The laboratory also benefited from the exceptional expertise of a part-time consultant, Carl Russell. One of the western laboratory's first projects involved planning and preparing exhibits for a new visitor center at Moose in Grand Teton National Park. Regional Historian Merrill J. Mattes's museum prospectus called for about 25 exhibits largely concentrated on the Rocky Mountain fur trade. It thus proposed to fulfill a dream of Russell nearly thirty years earlier when he worked as the Service's first museum expert. Russell's advice on these exhibits helped give them depth and detail unusual in park museums.

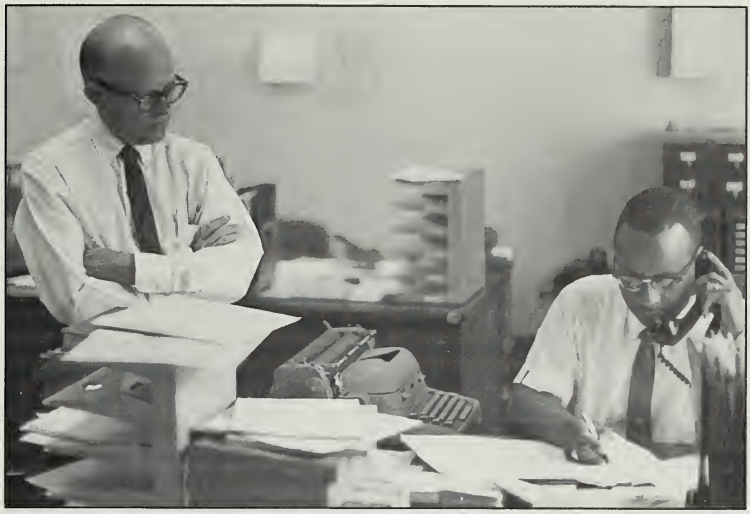
Although the Moose fur trade museum proved exemplary from the standpoints of historical and curatorial scholarship, exhibit design, and execution, it severely stretched the Park Service concept of a museum's proper function in a park. Fur traders had crisscrossed the land within park boundaries, but specific sites of significant events or activities lay elsewhere. The exhibits could not direct visitors into the park to relate its prime features to what they had learned in the museum. This divergence from the site museum concept perhaps made it easier 14 years later to eclipse Grand Teton's natural history site museum at Colter Bay with a

gallery of American Indian art, popular but also largely extraneous to an understanding of the park.

Management of the laboratory was especially difficult for a newcomer to the Park Service. The growing load of exhibit planning and preparation, combined with unfamiliar federal procurement and personnel policies, engendered innumerable problems. Production had just gotten into full swing in the summer of 1958 when John Jenkins was called back to Wisconsin for three weeks by a death in his family. This incident reinforced Jenkins' request for a second in command familiar with the procedures, policies, and standards the Museum Branch had found most satisfactory. As a result Floyd LaFayette moved from the eastern laboratory to become assistant chief of the western laboratory in January 1959. Although Jenkins and LaFayette would meet unforeseen difficulties, the move proved a happy choice for both men and a substantial benefit to the Service.[61]

The first difficulty involved special assignments. When funding in 1960 enabled the long-delayed development of the Jefferson National Expansion Memorial to resume, Superintendent George B. Hartzog, Jr., demanded that the Museum Branch send him its best exhibit planner. Subsequent actions suggest that he would have preferred to leave exhibit designing to Eero Saarinen, the eminent architect who had won the competition for the memorial, but Director Wirth insisted that details of interpretation remain in Park Service hands.[62] The Museum Branch accordingly asked Jenkins to undertake a six-month detail in St. Louis. Taking the content material being developed by a research team working at top speed under park historian William C. Everhart, Jenkins completed a museum layout plan incorporating more than two hundred exhibits under twelve thematic units. A new team employed at the park undertook detailed planning for the individual exhibits, but the project continued to make serious inroads on Jenkins' time.[63]

The branch also drafted LaFayette to work on urgent problems outside the western laboratory's full program. In mid-1962 the American Museum of Immigration slated for the base of the Statue of Liberty critically needed help in exhibit planning. By no means a typical park museum in concept or development, it fell outside the team schedules, and the branch had concurred in letting the park historian and a contract curator undertake the job. Although both had done excellent work on park museum projects before World War II, the plan they produced revealed that they had not kept up with changes in the field: it analyzed and organized the immigration story skillfully but attempted to tell it with 1930s exhibitry. With time running out as structural work on the museum was about to begin, the branch asked LaFayette to prepare a new plan. He did so successfully in collaboration with the park historian, Thomas Pitkin, and Alan Kent. It



Floyd A. Lafayette (left) with procurement assistant Andrew Summers.

took him most of the summer of 1962 with additional work on it interrupting his regular duties until its completion the following year.[64]

The second difficulty that plagued the western laboratory involved staff health. After a series of unsuccessful operations during 1964, Jenkins died that September at the age of 53. His death deprived the Service of a true museum expert. LaFayette carried on as acting chief of the laboratory until appointed chief in June 1966. Then his health failed in turn. By that time the Service had largely accomplished its Mission 66 objectives and turned toward new emphases.

The western laboratory constituted only one of the Museum Branch programs launched or expanded under Assistant Director Ronald Lee's leadership. To help cope with its many tasks the branch welcomed Harry C. Parker in October 1956. An impaired heart had forced Parker to give up his career as an energetic and popular naturalist in a succession of western mountain parks. He brought to his new job of museum specialist a valuable professional background and a determination to do his full share. His appointment made it feasible to reactivate the annual Museum Methods Course, which he helped prepare for and instruct. Parker's cheerful and expert service continued until his death in August 1961 at the age of 55. Alan Kent, although not completely freed of his planning team duties for another year, filled the gap he left.

When LaFayette had transferred to San Francisco two years earlier, James Mulcahy agreed to return to the branch from his curatorial post at Independence National Historical Park. Reporting in April 1959, he became Assistant Chief Frank Buffmire's principal collaborator in managing the eastern laboratory. Mulcahy shouldered a double load when the branch suffered another grievous loss in November 1963. Buffmire, whose talents had undergirded the quality and efficiency that characterized park museum development for more than a decade, left work early on a Friday to visit his doctor. He had survived a serious heart attack and felt disturbing symptoms. He died two days later at the age of 56.

Changes in Service organization concurrent with these events affected the branch in other ways. At the end of 1959 Ronald Lee left the Washington Office to become regional director in Philadelphia. His decision to move reflected departmental management policies that called for bigger organizational units and fewer assistant directorships. In Philadelphia he continued to work supportively with the Museum Branch, some of whose largest and most complex projects lay within his region. Daniel Beard succeeded Lee as chief of the Division of Interpretation, serving from January 1960 until the Washington reorganization took full effect the next year. The Museum Branch found Beard knowledgeable and helpful toward its concerns.

In the fall of 1961 Jackson E. Price became assistant director for Conservation, Interpretation and Use. His responsibilities included operations, maintenance, ranger services, safety, and concessions management along with most of what had been the Division of Interpretation. The former Branch of History became the Division of History and Archeology, the Branch of Natural History became the Natural History Division, and the Museum Branch joined two new branches, Research and Interpretation, in a Division of Research and Interpretation. Because this division remained nominal only, without a chief, the Museum Branch continued to report to Assistant Director Price, who gave its needs close attention and consistent support. His expert grasp of legal problems proved especially helpful when the branch's contract practices came under attack.

The branch customarily contracted for a variety of goods and services, including exhibit cases, collection storage equipment, and to a lesser extent exhibit production. The latter included certain photographic, silk-screen, metal casting, and other processes requiring equipment it would not pay the laboratories to install. The laboratories also secured by contract particular expertise, in taxidermy and flower modeling for example, which they needed only occasionally. In addition, when staff preparators could not keep pace with building construction, the branch contracted with display firms to produce and even install some exhibits.

In 1950 a display company in Washington contracted to prepare exhibits for the Ocmulgee museum rotunda while the laboratory concentrated on the more complex ones for the main room. The experimental collaboration went quite smoothly, although the contractor displayed an unfamiliarity with the proper handling of museum specimens. The next contract venture involved a larger Chicago firm that built exhibits for the Blue Ridge Parkway's Craggy Gardens visitor center in 1957. Two of the panels proved unacceptable. Getting them corrected convinced the branch that exhibit contractors needed to be near enough to allow regular inspection of their work.[65]

The branch did all its contracting through the Service's procurement officer, Roger Rittase. An artist himself, Rittase appreciated the difficulty of writing bid specifications for exhibit production. Display firms did most of their business for clients who wanted to sell something, while museum exhibits had a quite different psychological purpose and operated in a less strident environment. The different aesthetic quality and effect desired proved baffling to describe in unmistakable terms. Consequently the branch developed a bidding procedure that used the normal exhibit plan as the basic specification. Potential bidders studied the plan and in conference with the laboratory discussed in detail matters of style and practice required by museum standards. This was the situation when Mission 66 considerably augmented the exhibit production let to contractors.

When Rittase retired in November 1960, his replacement from the field, Houston Turner, took strong exception to the branch's procedure in exhibit contracting. His objection verged on a charge of unethical practice. While rejecting the implication, Assistant Director Price proposed that the new chief of property management select a procurement specialist whom the branch would hire to oversee contract purchasing at first hand. A procurement and property management officer for the branch accordingly entered on duty in August 1963. He did not solve the problem of writing tight specifications but introduced more formal bid conference procedures to ensure that each bidder perceived he had equal consideration.[66]

A mid-course analysis indicated that during the first four years of Mission 66 the laboratories provided well over a thousand exhibits. These included ones for 37 visitor centers, close to the projected rate of ten new centers a year. The centers averaged only 23 exhibits apiece (counting information displays for the lobby as well as interpretive units for the museum), allaying fears of runaway development in park museums. Unit costs of preparing exhibits increased, but only moderately. The average per exhibit stayed between $1,300 and $1,400 through 1960. After 1961, with labor and material costs continually rising, the figure climbed above $1,800. Throughout Mission 66 both eastern and western laboratories strained for maximum output to keep pace with building construction schedules. Some new centers did have to wait for their exhibits, and in a

few cases the laboratories had to store finished exhibits until a building was ready. Neither laboratory lowered its quality standards to speed the work. Both found satisfaction in the results.[67]

The two laboratories, 2,800 miles apart, had very little opportunity to see each others' work. Each had its own talented designers and preparators. They worked on projects for different parks, each of which presented unique aspects for interpretation. Every visitor center was tailored to fit a specific situation. Most Mission 66 exhibits nevertheless shared a stylistic mode that Park Service people in particular noticed.

Almost all park museums used a narrative approach, with exhibits sequentially arranged to present a series of related ideas illustrated by carefully chosen objects and graphic supplements.[68] Both laboratories tried to place every object and label within the best viewing range, a quite limited vertical span. Both used dust-tight cases with external lighting to protect vulnerable specimens on exhibition. Current taste called for recessing most of these cases into furred walls, which gave a neatly finished appearance of permanence without hindering future flexibility. Exhibits not requiring encasement usually took the form of open panels attached to the walls. The need to ship exhibits from the laboratories to the parks favored units of moderate size. So did local maintenance considerations. The latter also dictated general uniformity in exhibit lighting provisions. Under budgetary constraints exhibit rooms allowed floor space for the number of exhibits proposed and the visitor load anticipated but not for designers' flights of fancy in exhibit layout. Considerations of durability and maintenance led both laboratories to use similar structural materials. They shared information on their experience with various plywoods, hardboards, plastics, and paints as well as with silk screening and photo mounting. Their principal point of disagreement involved circulation theory.

Sequential exhibits depend for maximum effectiveness on people viewing them in a particular order. The relatively few museums outside the parks that stressed sequence generally either structured or obtrusively marked a one-way path for viewers to take. Disliking regimentation and obvious route marking, both laboratories aimed to make the sequence as easy as possible to follow without restricting freedom of movement. From published studies of visitor behavior, confirmed by personal observation, they knew that most people tend to turn right when entering an exhibit room and proceed in a counterclockwise direction, pausing at exhibits that catch their interest, glancing at others without stopping, and usually leaving the room by the first exit encountered. Of course, exhibits especially attractive because of size, motion, sound, or some other factor might divert individuals from the normal route.

Park museum planners worked with such behavior patterns in mind. They usually asked the architects for a single undivided room with a wide doorway through which visitors would enter and exit. The eastern laboratory consistently aimed to have people move around the room in a generally counterclockwise direction.[69] John Jenkins, on the other hand, felt more comfortable using a clockwise path when the architecture made that a simpler solution. Both laboratories succeeded in getting most people to follow the intended sequence up to a point. Circulation difficulties arose when the next exhibit in the story line was not the next one along the right-hand wall. Space limitations ordinarily required exhibits to occupy the center of the room as well as the perimeter, which necessitated "bouncing" viewers back and forth across the aisle between peripheral and central units. This practice, accomplished to some extent by various extensions of the furred walls coupled with visual attractants, tended to make the sequence too complicated. Associate Director Eivind T. Scoyen recommended numbering the exhibits, but the Museum Branch feared the numbers would distract attention from the interpretive content.

The recurrent problem of circulation underlined a longstanding need the branch felt for critical evaluation of the effectiveness of park museum exhibits. The specialists who designed and built the exhibits had little or no opportunity to observe how they worked. A small installation crew got a brief look at the finished job, usually through tired eyes, just before the formal opening. Almost never did planners, preparators, or their supervisors have an adequate chance to see the museum in normal operation, to watch visitors react to the exhibits, to learn which features seemed to work and which did not.[70]

The branch also craved objective evaluation from outside its staff to gauge how well the exhibits it produced served their purposes. Behavioral scientists had developed two methods of conducting such research. One, involving close observation of a sufficient sampling of visitors, assumed that various measurable aspects of behavior reflected what went on in the minds of those observed. The other method used systematic questioning to assess quantitatively what a random selection of visitors took from the exhibits. The branch had some hope that park interpreters might engage in these studies and included a unit on exhibit evaluation in the annual Museum Methods Course. After they returned to their parks, however, few trainees attempted systematic studies of visitor response to exhibits.[71] The branch saw one chance for a really professional study slip away but later established contact with an Office of Education project fostering exhibit evaluation research.[72]

While scientific testing continued to elude its efforts, the branch did receive a flow of subjective comment that had cumulative impact. It solicited some of this from Carl E. Guthe, a highly respected practical

museologist. Previously director of the New York State Museum, Guthe served the American Association of Museums as research associate from 1953 to 1959. In this capacity he crisscrossed the country with a house trailer studying particularly the problems of small museums. Ralph Lewis secured his appointment as a collaborator without compensation and invited him to visit and critique as many national park museums as he could in his travels.[73] Guthe's reactions to the park museums he saw were consistently favorable, no doubt partly because the new visitor centers with their professionally designed and executed exhibits contrasted sharply with the majority of struggling small museums his studies involved.

Another source of outside evaluation tended to counterbalance this impression. Following completion in 1957 of the extensive developments at Colonial National Historical Park, the Service engaged a communications expert from academic circles to review the new installations. His pungently worded and aptly illustrated report identified numerous flaws ranging from the design of information desks to the architecture of auditoriums. In the museums he pointed out specific circulation difficulties, exhibit design concepts that failed, and specimen installations that did not fulfill their potential.[74] His outspoken criticisms served to sharpen the eyes of Service personnel.

Most of the criticism directed at the exhibits in park museums came from within the Service. Carl Russell represented the viewpoint of material culture specialists and of collectors generally. He called on park museums to make greater use of historic objects in their exhibits and to label them more fully. Two Service colleagues echoed these recommendations when he made them in a paper before the Western Museums Conference in 1956. The plea for more specimens surfaced again in a discussion at the 1957 superintendents' conference. It was still being voiced strongly to the Western Historical Association at its 1963 meeting.[75]

The Museum Branch had in fact placed considerable emphasis on specimens as evidence, illustration, and stimulus in its innovative development of narrative exhibits. It felt that injecting additional objects merely for their inherent interest would be a backward step. As for fuller labeling, Herbert Maier criticized park exhibits as having too much text.[76] Between these contradictory views the branch strove to keep individual labels brief. It set 25 words as the desirable limit, which planners could not always achieve but at least approached. It trimmed drastically the label copy proposed by most park interpreters. Narrative exhibits as conceived by the branch did require fairly prominent title and key labels. These perhaps made the verbal content more obvious although not more lengthy.

Participants at the Chief Park Rangers' and Interpreters' Conference in March 1959 commented on the similarity in general appearance of park museum exhibits. This became the most consistently perceived fault of

Mission 66 installations. As one planner phrased it, "The usual complaint, that the museums are all alike, we hear constantly."[77] At the Visitor Services Conference in 1959, Maier and others raised the problem of visitors' difficulty in following the intended sequence of exhibits. Architect John B. Cabot mentioned this again in his 1960 paper before the Midwest Museums Conference. At the same time he decried Museum Branch preference for excluding or controlling daylight in exhibit rooms, for a single entrance/exit, and for counterclockwise circulation. He envisioned a grand collaboration of great designers from various fields to show museums the way out of such problems.[78]

In the midst of these strictures Ronald Lee appointed a committee on interpretive standards. He selected four experienced interpreters from his staff: Roy E. Appleman, historian, as chairman; Gunnar O. Fagerlund, naturalist; Carroll A. Burroughs, archeologist; and Donald J. Erskine, audiovisual specialist. Their highly critical report found a lamentable absence of standards recognized in the parks. In discussing park museums the committee stressed the similarity in form among exhibits, crowding too much content into individual exhibit units with consequent excessive labeling, circulation difficulties, and a lack of openness in exhibit rooms. Members perceived natural history as having received less adequate treatment than history in park museums.[79] Events within the Service delayed any direct action on the committee's findings, but the report provided fuel for change.

Director Wirth retired in early January 1964. His successor, George Hartzog, lost no time in taking action to establish the priorities of the new directorship. These included three principal changes in park interpretation. The ability to communicate effectively with visitors would replace expert knowledge of subject matter as the prime requisite for park interpreters. The Service would greatly increase its investment in audiovisual media to supplement personal interpretive contacts. Museum work would undergo reorientation, especially in respect to exhibit policy. To effect the interpretive realignment Hartzog chose William C. Everhart, who had been chief park historian at the Jefferson National Expansion Memorial while he was superintendent there. Moving up from the Long Range Requirements Task Force, Everhart became chief of the new Division of Interpretation and Visitor Services.

The energy that characterized Everhart's leadership became evident at once. Within a month of his promotion he secured the appointment of Carl G. Degen, a talented filmmaker, to head a new Branch of Motion Pictures and Audiovisual Services. Everhart also promptly organized an interpreters' conference that met six weeks later at Harpers Ferry. As a clear sign of his intentions the conference featured extensive discussions with Charles Eames, one of the leading designers in the display field.[80]

The first steps to alter museum organization and practice preceded these actions. Before the end of February 1964 a Museum Study Team began a management survey of the Museum Branch. Director Hartzog appointed William S. Bahlman, chief of the Management Analysis Division, to chair the group and architect John Cabot, Assistant Regional Director I. J. (Nash) Castro of the National Capital Region, and Harold Peterson as members. The team submitted its report at the end of March, and Hartzog quickly approved it. The team had proceeded on two assumptions: first, the Park Service museum program should attain the highest standards of the museum profession; second, "in the excellence of exhibit design, in creative solutions to museum presentation, our museums should achieve first rank in the field of communicative arts."[81]

The study confirmed the exemplary quality of workmanship in Service exhibits. It generally supported existing policy of contracting for exhibit construction when needed to maintain a stable level of employment in the laboratories. On the other hand, the team found management of the branch deficient in several respects. Scheduling needed to be tighter, supervision closer, internal communication improved, and employees more highly motivated. While justifiable, these criticisms perhaps also reflected the widespread interest at the time in aggressive management tactics. The comment on motivation probably related to the fact that preparators in particular lacked a satisfactory career ladder. Several fine craftsmen and artists could expect no further promotion unless the laboratories created an intermediate supervisory hierarchy for them.

The survey concluded that the Museum Branch, much larger than most in the Washington Office, had become "too big and unwieldy for efficient management." The report therefore recommended splitting the existing organization into two branches.

A new Branch of Museum Development would plan, design, prepare, and install museum and wayside exhibits. In the process it would collaborate more closely with interpretive planners, architects, and landscape architects. When appropriate, it would contract for exhibit design as well as production. The staff would comprise a small headquarters group and the two exhibit laboratories, eastern and western. The report proposed a number of guidelines on managing production and on exhibit design and preparation. One of these—"The narrative story should, generally, be presented through publications and audiovisual means"—marked a turning point in the role of park museums. For nearly thirty years visitors could find in the museum a reliable, succinct, and integrated explanation of the features or events the park had been established to preserve or commemorate. Exhibits would continue to have their self-service advantages that visitors could adapt to their individual interests, but their new place in the interpretive program was not yet clear.

The second unit, a Branch of Museum Operations, would provide leadership and guidance to the parks in the day-to-day maintenance and operation of their museums. The study team proposed that this branch insure unity in standards and procedures to keep Service practice "abreast of the best in the museum field." It would guide all curatorial work within the national park system, offer expert services in acquiring, identifying, authenticating, recording, conserving, and caring for museum objects, and arrange for curatorial training for park employees. The Branch of Museum Development would repair, rehabilitate, and replace existing exhibits in the parks, but Museum Operations would determine when a park needed such work.

The director scheduled the reorganization to take effect July 6, 1964. The two branches were not physically separated; the people involved remained at their accustomed work stations in Tempo S and the old San Francisco Mint. Everhart designated Harold Peterson to serve temporarily as acting chief of the Branch of Museum Development. Peterson retained meanwhile his position as chief curator, which lay in the Branch of Museum Operations. Delay in appointing a permanent Museum Development chief reflected the desire to find someone particularly qualified to make design a strong element in Park Service exhibition. Everhart did hire at once a new chief for the Eastern Museum Laboratory: Russell Hendrickson, whose outstanding work as head of the Agriculture Department's exhibit shop confirmed the impression made during his earlier tenure in the laboratory. Museum Development retained for office staff Bertrand L. Richter as financial management assistant with Forrest McCain as fiscal clerk and Rolla D. Everett as procurement and property management officer with Andrew Summers as procurement assistant. Both eastern and western laboratories became part of the branch, losing only their conservators to Museum Operations. The latter branch had Ralph Lewis as chief, Peterson as chief curator with primary responsibility for curatorial and conservation functions, two staff curators—Vera Craig to concentrate on museum records and furnishing plans and Fred Winkler to search for and acquire specimens, four conservators, and Thelma Wolfrey as branch secretary.[82]

New directions in exhibition constituted the most apparent result of the new order. At the same time, the reorganization freed the Museum Operations staff to concentrate on the critical curatorial needs of park museums.

NOTES

1. Burns, Report of Field Trip, Apr. 22-May 14, 1946, Monthly Reports, Museum Division box, NPS History Collection.

2. In 1953 Russell obtained a leave of absence from the superintendency of Yosemite to accept a John Simon Guggenheim Memorial Foundation fellowship. This allowed him to prepare for publication the fur trade research to which he had devoted his spare time during more than twenty years. The University of California published his *Guns of the Early Frontiers* in 1957 and Alfred A. Knopf published his *Firearms, Traps, and Tools of the Mountain Men* in 1967.

3. Monthly Report, Eastern Museum Laboratory, December 1946, Monthly Reports, Museum Division box, NPS History Collection.

4. One piece of equipment obtained from military surplus proved too heavy to lift even with the entire staff on the end of the rope. It had to be inched into the basement for dead storage until the laboratory moved.

5. Fiscal Year 1948 Program Schedule, July 1947, Monthly Reports, Museum Division box, NPS History Collection; Monthly Reports, Eastern Museum Laboratory, Nov. 15–Dec. 26, 1947, and Dec. 28, 1947–Jan. 27, 1948, ibid. Region One assigned Hudson to develop temporary exhibits in park museums not included in current programs, so that he worked somewhat independently of the Museum Branch. Robinson did valuable preliminary planning for projected museums at Custer Battlefield and Homestead national monuments.

6. The map took the form of a bird's-eye view of northern Virginia on which blue and red lights showed places and routes of strategic consequence in bringing the armies into confrontation at Manassas. Labeled switches enabled visitors or a park interpreter to operate the lights in sequence.

7. U.S. Department of the Interior, *Annual Report of the Secretary of the Interior, Fiscal Year Ended June 30, 1949* (Washington: Government Printing Office, 1949), p. 309. Hereinafter cited as *Interior Annual Report for (year)*.

8. Eastern Museum Laboratory monthly reports, Monthly Reports, Museum Division box, NPS History Collection.

9. Eastern Museum Laboratory monthly report, Dec. 28, 1947–Jan. 27, 1948, Monthly Reports, Museum Division box, NPS History Collection; Museum Branch monthly report, February 1948, ibid.

10. Museum Branch monthly reports, July-September 1948, ibid.

11. Museum Branch monthly report, September 1948, ibid.

12. Museum Methods Course folders, Branch of Museums General Files, NPS History Collection.

13. Ibid.; Ralph H. Lewis, "Museum Training in the National Park Service," *Curator* 6, no. 1 (1963): 7-13.

14. Mather Center chief Russell Grater also had a personal interest in the curatorial duties of park naturalists and equipped the center with specimen collecting and mounting supplies, standard collection storage cabinets, and sample natural history study specimens properly prepared, labeled, and stored. His successors soon dispersed these training aids.

15. Harry B. Robinson, "The William H. Jackson Memorial Wing at Scotts Bluff National Monument," *Nebraska History* 31, no. 2 (June 1950): 126-46.

16. *Interior Annual Report for 1950*, pp. 314, 317-18.

17. Museum Branch monthly reports, October 1950–January 1951, Monthly Reports, Museum Division box, NPS History Collection. Urban remained with the laboratory for several years before joining Rudolf Bauss in National Capital Parks. Danish-born Carl Christiansen, small in stature, frugal in habits, cheerful, excitable, and well-liked, stayed on the staff until June 1954 when wanderlust impelled him to leave. Known as Little Chris in comparison to Gardell Christiansen, he saved his money—sometimes eating canned pet food for lunch—and used his leave for lone bus trips to places as distant as he could afford. Big Chris (Gardell) stayed with the laboratory about three years, leaving to build a series of dioramas for the Montana Historical Society. Lillis came from a position in the display advertising department of Woodward and Lothrop, a Washington department store, and stayed for more than a decade before taking a park museum development assignment in Australia under former Blue Ridge Parkway superintendent Sam Weems. Liggan served well for the remainder of his career, becoming the laboratory's silk screening expert. LaFayette concentrated his versatile skills on museum planning and production. Willett, who combined an outgoing personality with a penchant for fast driving, transferred to the field when the pressure for curatorial support abated, becoming a park superintendent. Pearson did excellent work but could not be hurried. He modeled a figure for a diorama of John Wesley Powell's Colorado River expedition first in robust health, then progressively "starved" it by shaving down the clay little by little over what seemed like weeks until it properly expressed the toll of accumulated hardships.

18. Museum Branch monthly reports, October and December 1950, Monthly Reports, Museum Division box, NPS History Collection.

19. Museum Branch monthly reports, October 1950-January 1951, ibid.; *Interior Annual Report for 1952*, p. 366. The exhibit contractor was Creative Arts Studio, one of the few display firms then operating in the Washington area.

20. Don Rickey, Jr., "Myth to Monument: The Establishment of Custer Battlefield National Monument," *Journal of the West* 7, no. 2 (April 1968): 203-16.

21. Burns regarded the building, at least at first, as too plain, likening it to a "pickle factory." The only significant disagreement between Superintendent Luce and the Museum Branch concerned his ardent wish to display the stuffed remains of Comanche, the only cavalry mount to escape death or capture in the fight. The branch prevailed, suggesting that at some later date an addition to the building might provide a suitable stable. Robinson's *Guide to the Custer Battlefield Museum* was reprinted from the July 1952 *Montana Magazine of History*.

22. James Wright Brown, "The Zenger Memorial Is Now a National Shrine," *The Quill* 41, no. 6 (June 1953): 8-9. The Federal Hall Memorial Associates formed a third party in the contract because they collaborated in operating the building. The Zenger Memorial Fund, established about 1942 with another site in mind, had raised $45,000–50,000 for the purpose.

23. This object, an inscribed gold box recognizing Andrew Hamilton's eloquent defense of Zenger, belongs to the Pennsylvania Historical Society, which facilitated the Service's request to include a photograph of the box in the exhibit.

24. Thomas W. Leavitt, "The Need for Critical Standards in History Museum Exhibits: A Case in Point," *Curator* 10, no. 2 (June 1967): 91-94. Leavitt judged the exhibits failures for trying to present intangible subjects lacking associated historic objects.

25. *Interior Annual Report for 1951*, pp. 314-15.

26. Museum Branch monthly report, December 1950, Monthly Reports, Museum Division box, NPS History Collection.

27. Wayside exhibits continually engaged the creative talents of the Museum Branch and its successor Branch of Museum Development until 1970, when a new Branch of Wayside Exhibits took over the responsibility.

28. *Interior Annual Report for 1952*, pp. 366-67.

29. Museum Branch monthly report, May 1954, Monthly Reports, Museum Division box, NPS History Collection.

30. Museum Branch monthly reports, February 1954-January 1955, ibid.

31. Museum Branch monthly report, June 1954, ibid.

32. *Interior Annual Report for 1955*, p. 340; Proceedings of Visitor Services Conference, Big Meadows Lodge, Shenandoah National Park, Oct. 5-9, 1953, pp. 3-4, 15, in Conferences 1950-55 box, NPS History Collection.

33. Museum Branch monthly reports, February 1954–July 1956, Monthly Reports, Museum Division box, NPS History Collection.

34. *Interior Annual Report for 1955*, pp. 340, 353-54.

35. Museum Branch monthly reports, August 1954–June 1955, Monthly Reports, Museum Division box, NPS History Collection.

36. Museum Branch monthly report, July 1954, ibid.

37. Museum Branch monthly reports, September and October 1955, ibid.

38. The Grand Canyon museum later had to yield much of the space designed for it to expanding administrative demands. The changes largely vitiated the exhibit sequence as originally planned.

39. Abbott's proposals included installing large paintings in the open along auto tour routes and at waysides bordering the Colonial Parkway. The park's procurement of these paintings irked the Museum Branch, partly because the quality of workmanship seemed below what the laboratory could have provided but even more because the park assumed all the hidden overhead costs and chided the laboratory on its apparently more expensive products.

40. Proceedings of Visitor Services Conference, p. 5.

41. After retiring in 1959 Dreyer was replaced by his son, Kenneth, who moved from working with massive steel forgings at the Naval Gun Factory to shaping delicate miniatures and fittings with apparent ease. Hadley had high potential as a model maker but chafed at the application of some quality standards; he later became a leading preparator for the Hagley Museum. Smith, who remained until the laboratory moved in the 1960s, could mold copies of a single handmade miniature musket in as many sizes as perspective within a diorama required. Hendrickson, who had completed Marine Corps service with a stint of portrait painting, transferred to the Agriculture Department to obtain a higher salary to meet family illness expenses. He developed exhibits for the Forest Service and displays for an overseas exhibition program until the Park Service recalled him in the mid-1960s.

42. Besides his steady, dependable work on park museum exhibits, Spagnolo designed and installed exhibits for the Washington headquarters of B'nai B'rith. Updegraff's valued services were lost when she transferred to the Exhibits Office of the Library of Congress in consequence of the laboratory's relocation. Biskin, who later married Harry Wandrus of the laboratory staff, ultimately became chief of the Branch of Graphics Research in the Division of Reference Services.

43. Conrad L. Wirth, *Parks, Politics, and the People* (Norman: University of Oklahoma Press, 1980), pp. 237-84. See especially pages 268-70.

44. Chief Historian Herbert Kahler was the first person the writer heard use and advocate the term "visitor center." Its aptness to the functions intended influenced its adoption more than any lingering prejudice against museums in the parks.

45. NPS *Museum Handbook* (Release No. 1, July 1967), Part I, Introduction.

46. *Interior Annual Report for 1956*, pp. 9, 314.

47. Museum Branch monthly reports, March–June and October 1956, Monthly Reports, Museum Division box, NPS History Collection. Barrel, a Harvard graduate, contributed some of the best label writing to be found in any parks. Sutton had creative skill in selecting and arranging subject matter for exhibition and a sharp ear for words, evident in the several books he and his wife Ann later wrote. Manucy had developed exceptionally good homemade interpretive exhibits and signs for the Castillo de San Marcos and Fort Matanzas. While on the team he brought expert knowledge and great tact to critical projects for Fort Caroline National Memorial and Fort Frederica National Monument. Bierly was a three-time winner of the national duck stamp competition.

48. Museum Branch monthly reports, January 1957, August and September 1958, March 1963, ibid.

49. Museum Branch monthly reports, August and October 1959, March 1963, ibid. Frank Buffmire recommended Sagan after observing his willing help to the crew installing the Grand Canyon exhibits in 1957. Sagan was deeply interested in interpretation but did not find museums a particularly congenial medium. Estes came to the notice of the branch while it was working on the Museum of North Carolina Minerals and he was serving as a Blue Ridge Parkway naturalist. He performed ably on the team through the rest of Mission 66 and later became a park superintendent.

50. Museum Branch monthly reports, August and October 1956, May 1957, August 1959, ibid.

51. Museum Branch monthly reports, January–June 1957, ibid.

52. Visitor Center Planning: Notes on Discussions Held in EODC Nov. 18-22, 1957, and WODC Feb. 4-6, 1958, Interpreters' Conferences 1929-58 box, NPS History Collection.

53. Museum Branch monthly reports, April, June–August, October, November 1956, May and September 1957, March, June–October 1958, March 1959, August–November 1960, Monthly Reports, Museum Division box, NPS History Collection.

54. Museum Branch monthly reports, July 1956, August and December 1957, ibid.

55. Letter, Ralph H. Lewis to Jenkins, Mar. 14, 1956, WML Personnel box, NPS History Collection; memorandum, Frank Buffmire to Regional Director, Region Four, Aug. 21, 1956, ibid.

56. Memorandums, Chief, Western Museum Laboratory, to Chief, Museum Branch, Dec. 11, 1957, and Mar. 10, 1958, Monthly Reports, Museum Division box, NPS History Collection.

57. Memorandum, Personnel Officer to Chief, Branch of Museums, Sept. 25, 1957, WML Personnel box, NPS History Collection; memorandum, Acting Personnel Officer to Chief, Branch of Museums, Oct. 8, 1957, ibid.; memorandum, Chief, Central Accounts, to Regional Director, Region Four, Nov. 28, 1957, ibid.; memorandum, Chief, Western Museum Laboratory, to Director, Dec. 30, 1957, ibid.

58. Memorandums, Jenkins to Chief, Museum Branch, May 27 and Dec. 16, 1958, Monthly Reports, Museum Division box, NPS History Collection. The final addition to the preparation staff came in 1965 when Carey retired and Douglas Aitken replaced him for ten months before resigning.

59. Western Museum Laboratory monthly reports, January and February 1962, February 1964, Western Museum Lab Reports box, NPS History Collection.

60. Western Museum Laboratory monthly reports, January and November 1960, February and December 1961, September and November 1962, February, May, July, September 1963, February, May, June, July, September 1964, August and September 1965, ibid. The temporary curators included Richard T. Gale, Vernon Fagerlund, Barbara Grater, Hugh K. Hill, Robert Schuler, Lee Clifford Soubier, Frederick Wilding-White, Geoffrey Brown, and Lina Cassaro.

61. Memorandums, Chief, Western Museum Laboratory, to Chief, Branch of Museums, July 11 and Dec. 16, 1958, Monthly Reports, Museum Division box, NPS History collection.

62. Wirth had responded the same way when architect Richard Neutra wanted to design the exhibits along with his visitor center building at Gettysburg. In planning the visitor center at St. Louis, Saarinen and members of his staff inspected several new park centers in company with historian Roy Appleman and the writer. Saarinen's comments were negative: "These show us what we don't want to do."

63. John W. Jenkins, "Gateway to the West," *The American West* 1, no. 1 (Winter 1964): 53-58.

64. Western Museum Laboratory monthly reports, June–August, October 1962, June and July 1963, July 1964, January 1965, Western Museum Lab Reports box, NPS History Collection.

65. Museum Branch monthly reports, December 1950, April and June 1957, Monthly Reports, Museum Division box, NPS History Collection.

66. Staff Meeting Minutes, Nov. 17, 1960, and Jan. 12, 1961, 1959-1963 Director's Staff Meeting Minutes box, NPS History Collection. The Museum Branch blamed this employee for the one fiasco it experienced in contracting for specimen storage equipment. In a year when funds permitted an unusually large order, he invited bids from companies unfamiliar with museum standards. The resulting cabinets failed to meet specifications in some important respects.

67. Reexamination of the Museum Phases of Mission 66, June 22, 1960, Museum History 1960-70 box, NPS History Collection. Installations exemplifying work of the eastern laboratory included Carlsbad Caverns (1958), Hopewell Village (1959), Wright Brothers (1960), Sugarlands at Great Smoky Mountains (1960), and Gettysburg (1963). Dinosaur (1959), Moose at Grand Teton (1960), Death Valley (1960), Fort Vancouver (1962), and Whitman Mission (1964) were examples of western laboratory production.

68. The Rock Creek Park Nature Center constituted a principal exception to the narrative approach. Naturalist Drew Chick requested participatory exhibits on local natural history designed to stimulate the interest of urban children.

69. The exhibit room designed by Neutra for Gettysburg, a cylindrical space beneath the cyclorama, forced the eastern laboratory to use a clockwise sequence that worked unusually well.

70. Ralph Lewis used a two-week field trip in 1960 to inspect several new visitor center installations in eastern parks and compare them with current practice in other museums. John Jenkins took three weeks of annual leave the next year to check on Western Museum Laboratory installations.

71. In 1937 historian Merrill J. Mattes of Scotts Bluff prepared a report containing perceptive observations on the reactions of visitors to the new museum exhibits there (First Annual Report of Museum Activities, Scotts Bluff National Monument box, NPS History Collection). Historian Harry W. Pfanz of Gettysburg, a member of the 1961 Museum Methods class, developed a pertinent questionnaire on the new exhibits at his park and administered it to a visiting group of university students with interesting results. Budget Bureau regulations curtailing federal agency use of questionnaires cut short his study.

72. Director Wirth's Long Range Requirements Task Force decided in 1962 to commission an independent study of visitors to the parks. Myron Sutton, responsible for designing the study, agreed to include an evaluation of museum exhibit effectiveness. Before the task force could let a contract, the Service dropped the proposal in the face of a *Washington Post* article ridiculing the concept. A little later Park Service statistician Sidney Starobin did conduct some quiet research on visitor center use in a few parks.

73. *Museum News* 31, no. 5 (Sept. 1, 1953): 3; ibid. 38, no. 1 (September 1959): 9; letter, Ralph Lewis to Guthe, Sept. 25, 1962, Branch of Museums Dailies storage box, NPS History Collection.

74. A portion of this consultant's report on the Yorktown visitor center is in the Colonial National Historical Park box, NPS History Collection.

75. Folder 364, Box 70, Carl Parcher Russell Papers, Washington State University Archives; 1957 Park Development Conference, p. 52, Conferences 1952-59 box, NPS History Collection; Merrill J. Mattes, "Museum Philosophy and Practice of the National Park Service," and comments by John Jenkins and James Forrest, Museum History 1960-70 box, NPS History Collection.

76. Visitor Services Conference, pp. 121-22, Conferences 1952-59 box, NPS History Collection.

77. Draft memorandum, Marc Sagan to Chief, Branch of Museums, Sept. 12, 1961, Museum History 1960-70 box, NPS History Collection.

78. Cabot, "The Visiting Public and Museums," Behavior Studies box, NPS History Collection.

79. Report, Committee on Interpretive Standards, National Park Service, May 1, 1962, Policy and Philosophy 1960-68 box, NPS History Collection.

80. Director's Staff Meeting Minutes, Mar. 5, Apr. 2 and 30, May 14, 1964, Staff Meetings (Director) 1964-69 box, NPS History Collection.

81. Memorandum, Museum Study Team to Director, Mar. 27, 1964, Branch of Museums History box, NPS History Collection.

82. Memorandum, Chief, Division of Interpretation and Visitor Services, to Members of Branch of Museums, July 2, 1964, ibid.

THE MUSEUM PROGRAM, 1964–1982

During the 18 years reviewed in this chapter the exhibit function of park museums remained in the spotlight. The National Park Service considered museums principally as interpretive media rather than as essential custodians of basic park resources. Substantially more money and manpower went to provide displays than to manage collections. Exhibits, however, had to fit into a new interpretive equation in which audiovisual elements became a prime factor.

The first half of the period brought unprecedented growth to the national park system. Under a director gifted with promotional skills the system gained 78 parks totaling about 4,200 square miles in area. They came in faster than adequate funds to study, develop, and operate them.

Actively promoted special interpretive goals demanded much staff effort. Amid growing perceptions that the natural environment was gravely endangered, public officials and private organizations rallied opposition to numerous exploitative proposals and practices. The Park Service made its contribution by launching an environmental awareness program. This involved all levels of staff, extended far beyond the usual audience of park visitors, and threatened to inject propaganda into museum exhibits where policy traditionally called for impartiality. At a time when New York City faced imminent bankruptcy, American cities generally wrestled with critical economic and social problems. The Service reacted with new urban park programs. Park staffs could measure the intensity of the emphasis by the degree to which experience in urban situations aided career advancement. Enthusiastic encouragement for developing "living history" as an interpretive method in the parks coincided with a wave of official and public interest in the performing arts. Communicative skills soon overshadowed knowledge of content in the qualifications desired of park interpreters. These diverse and overlapping program thrusts accompanied years of turmoil in American life marked by angry or violent confrontations on racial issues, the Vietnam War, and other concerns.

For most museums these years brought financial cutbacks and insistent demands that they become relevant to current social concerns. Museum reactions somewhat paralleled those of the Park Service. The American Museum of Natural History, for example, had a contract designer construct in its main entrance hall an expensive, labyrinthine, multimedia display hammering home concepts of the environmental crisis. The Metropolitan Museum of Art installed a highly publicized exhibition, "Harlem On My Mind." The Museum of the City of New York staged major exhibitions on venereal disease and drug addiction.

By comparison, the second half of the period under discussion seemed stable. Although the Park Service had a succession of four new directors and frequent administrative reorganizations, attention centered on the basic mission. Emphasis bore on improved preservation of the parks old and new and on better-informed management of their resources "unimpaired for the enjoyment of future generations" as Congress had directed in the act establishing the Service. Although the momentum of expansion continued, including a massive accession of Alaska parks, Service effort remained in focus on the deep-rooted goals. In such a climate managers began to see more clearly that museum collections did indeed constitute significant park resources requiring responsible care.

Redirection of Exhibit Functions

Many factors in the 1960s and 1970s fostered a public taste for more visually exciting exhibits than museums had customarily provided. In response to this trend, some museums hired professional designers to enliven their display techniques. Others contracted with design and exhibit production firms, which grew in number to meet the demand. When design considerations dominated, installations sometimes appeared to have more impact on the emotions than on the mind. Because museums generally continued their concern for the educational purpose of exhibition, debate ensued on the communicative role exhibits should or could play. Natural history and other science museums tended to focus on the refinement of didactic rather than affective displays and on developing ways to measure their effectiveness. Park Service participation in this flow of change depended for its direction and rate largely on the person in charge.

William Everhart brought to his new duties as chief of interpretation and visitor services ideas about museum exhibits strongly influenced by his experience as park historian at the Jefferson National Expansion Memorial. There he had worked closely enough with John Jenkins on plans for the Museum of Westward Expansion to appreciate constraints imposed by narrative sequences. The memorial had a story to tell far longer and more complex than most park museums encountered. The Jenkins exhibit plan, excellent as it was, did not quiet the critical questions being raised about sequential display. Neither did it fully overcome objections to the limited dimensions characteristic of park exhibit units and the consistent practice of protecting specimens by encasement.

Everhart also worked with Eero Saarinen and his staff who were designing space for the Museum of Westward Expansion in the underground visitor center at the base of the Gateway Arch. Here was an architectural team already famous for bold design innovations. Its personnel radiated confidence in the potency of design to accomplish multiple purposes—to

communicate, influence behavior, and solve practical problems with fresh ideas.

As construction proceeded on the great arch, Everhart watched a talented St. Louis film maker, Charles Guggenheim, produce a stirring documentary of the process. Impressed with this example of the power of the film medium to present an unfolding story, he determined to include a motion picture as a complement to the museum in the visitor center. Colonial Williamsburg had demonstrated the value of a film as the main interpretive feature in its reception center, and he could see many advantages that static exhibits seemed to lack. Contracting with Guggenheim to create such a film, he traveled widely in the West to select key locations. From these contacts with Jenkins, Saarinen, Guggenheim, and others he carried to future assignments three apparent interpretive partialities. He doubted the efficacy of exhibits as then used in park museums, supported the application of creative design in all interpretive media, and saw great potential for audiovisual programs—especially motion pictures—in park interpretation.

Everhart's enthusiastically held views infused his divisional programs. His publications chief, Vincent L. Gleason, contracted with taste-setting designers and artists who helped produce striking park posters and illustrate interpretive booklets. Gleason spearheaded the engagement of a leading design firm, Chermayeff and Geismar, to devise a "Parkscape" symbol for the Service and a new seal for the Interior Department. In the spirit of the decade the first was expected to replace the representational arrowhead emblem; the other substituted an abstraction suggestive of supporting hands for the historic bison.[1] Carl Degen, head of the enlarged Branch of Motion Pictures and Audiovisual Services, initiated the design and production of an impressive series of award-winning films and slide-sound programs tailored to specific park visitor centers. For interpretive planning supervisor Everhart in 1966 selected Marc Sagan, who had worked on such plans at regional level after leaving a Museum Branch exhibit planning team. Sagan fully shared his reservations about exhibits as the principal medium to tell a park's basic story. Design emphasis in the Branch of Museum Development would come from Russell Hendrickson. He promised strong capability and interest in new exhibit approaches. The branch added designers to its planning staff and moved quickly into working with contract designers of established reputation on most major exhibit plans.[2]

The Ford's Theatre project, completed in early 1968, typified the exuberance with which the entire division began operations. Congress directed the Park Service to reconstruct the Ford's Theatre stage and auditorium of 1865 within the historic walls of the building. The legislators aimed to recreate the setting of Lincoln's assassination as a further memorial to the martyred President. The Service accepted the task with

some misgivings. Lincoln's killer had made his deed so theatrical an act that it would be hard to keep him from stealing the show. Nevertheless the Service applied its best talents to the costly and difficult job.

The division's part in the project took three forms. The Branch of Museum Development would create a completely revised Lincoln Museum in the enlarged basement. The Branch of Museum Operations would collaborate in a special committee refurnishing the theater in detail to match the moment of assassination. The division chief with the aid of other branches would concentrate on developing a sound and light program for the refurnished interior that would interpret it properly.

The museum exhibits recalled Lincoln's life. Three open stages formed a circle around an impressively installed life cast of Lincoln's face and hands. The stages held specimens and graphics interpreted in turn by an audio script synchronized with spotlights. The museum's specimens related to the assassination plot, intentionally deemphasized, were compactly exhibited in a small alcove. In the theater itself the special interpretive program told the dramatic story of the assassination in a manner that kept Lincoln the center of concern.

As all three division projects neared fruition, an impresario persuaded higher authority to allow regular use of the theater for live performances.

Lincoln Museum, Ford's Theatre National Historic Site, 1968. An early example of the exhibit design principles set under the 1964 reorganization.

This proved the proverbial camel's nose. Soon the sound and light program disappeared along with the carefully researched and expensively reproduced stage scenery. The comfort of theater patrons overrode historical accuracy in auditorium seating. The museum had to serve in part as an inter-act promenade on the way to restrooms. What remained of the project as conceived could serve its intended purpose only at the convenience of the theater operation.[3] The new direction would have to find adequate fulfillment elsewhere.

The influences channeled through Everhart's dynamic leadership assured specifically that exhibits in park museums would have a new purpose and new forms. His prohibition of exhibits arranged in narrative sequence effected the more profound change. Concurrent warnings to avoid the case and panel stereotype produced the more visible alteration.[4] Freed to extend exhibits from floor to ceiling in largely open arrangement and urged to make every park museum visually unique, designers conceived a wide variety of displays. Planners most often described the new purpose of exhibits as giving visitors discrete impressions.[5] These impressions or vignettes, not to be viewed in any set order, would give morsels of information and by cumulative effect stimulate interest, evoke appropriate emotional responses, and lead to enriched insights into the park's meaning.

The Kings Mountain National Military Park museum, before and after, affords a representative example of the new direction. The exhibits installed there soon after World War II followed the prewar exhibit plan, drafted with minimal design input. They had three stated purposes: to interpret the significance of the "mountain men," tell those phases of the park story not occurring on the battlefield, and help portray the specific nature of the combat. A stirring quotation from Theodore Roosevelt's *Winning of the West* dominated the end wall of the small museum room. A counterclockwise sequence of exhibits lined the four walls. Six cases containing specimens and models, five open graphic panels, a diorama, and an automatic slide unit conveyed pertinent factual information backed with objective evidence where possible. A topographic model occupied the center of the floor.

In 1975 the old exhibits gave way to a new installation. This aimed to interpret the regional cultural and political challenges that precipitated the battle. It presented visitors with an open display of original and reproduced objects typical of 18th-century rural life in the affected area. The specimens were arranged in theatrical tableaux. In lieu of labels the exhibit had an audio accompaniment involving imaginary dialogue among people of the Revolutionary period. The audio actuated spotlights calling attention to specific objects and settings.[6]

The old and new installations obviously differed in their concepts of how visitors make intellectual use of park museum exhibits. Which came

nearer to meeting visitor needs? The answer, unfortunately, must remain a matter of unverified opinion. The Museum Branch before the change had failed in its efforts to obtain objective evaluations of the effectiveness of its sequential narrative exhibits. Proposals to measure the effect of new-style exhibits in park museums late in the 1970s also came to naught. The Southeast Region asked for pretesting of the revised Ocmulgee exhibits in 1978 with full-scale mockups to observe how people reacted to their form and content, but by the time concepts had evolved far enough to allow detailed mockups, too much money had been invested in design to permit further substantial changes.[7]

In 1979 exhibit planner Saul Schiffman, who had taken part in a Smithsonian exhibit evaluation seminar, arranged for the Smithsonian to present a two-day session at the Mather Training Center. About twenty Park Service planners and exhibit designers attended discussions led by Chandler Screven and Robert Wolf, both practicing specialists in measuring exhibit effectiveness. These experts were primarily concerned with the amount of specific learning an exhibit produces, however, and Service supervisors concluded that park exhibits did not have defined learning goals measurable by such methods.

The new exhibits took many forms besides the tableaux at Kings Mountain. Designers made frequent use of what they called supergraphics, usually pictures photographically enlarged to cover wall sections or background panels. Freestanding pylons supported specimens or models or carried graphics, often on two or more sides. Artfully spaced throughout a floor area rather than along the walls, they facilitated random viewing. Another characteristic approach involved varied visual elements in a series of receding and partially overlapping planes. Such arrangements offered an overall impression from which visitors could sort out and focus on individual parts. Groups of specimens might form more or less prominent design elements in these compositions. In many instances the contribution of specimens to the design appeared to outweigh placing and lighting them to encourage detailed examination and comparison. Design considerations also threatened to compromise the protection of specimens at times. Specimen and graphic labeling tended to be minimal. General labels, which might well be apt quotations, played a larger role unless replaced by audio devices. Use of audiovisual techniques increased, as did their sophistication. But one superintendent rebelled at a proposal to have projected white figures flow along the carpeted walls of his museum to create a desired mood.[8]

Branch of Museum Development, 1964–1967

Harold Peterson continued as acting chief of the branch until the fall of 1967. He held responsibility for getting the exhibit program firmly set in its new direction while tightening management practices. He oversaw formulation of annual goals and budgets, kept an eye on production schedules and costs, reported progress, and maintained liaison with other programs within the division. He succeeded in having many of the exhibit planning and production positions upgraded. At the same time he carried on his important duties as chief curator in the Branch of Museum Operations. Because he maintained his old office in the Interior Building, he left day-to-day supervision of the museum development staff to Russell Hendrickson, the new chief of the Eastern Museum Laboratory. Hendrickson's effectiveness led to growing reliance on his management of branch matters. He, rather than the acting chief, had direct charge of the new design initiatives as they applied to exhibits.

Hendrickson used his considerable design talents on exhibit plans in preparation. The new branch started out with some projects already under production. It was too late to redesign these, and funds were inadequate to permit a fresh start on all the approved plans awaiting execution. So for the

James M. Mulcahy and Russell J. Hendrickson. Artists and leaders in the Park Service museum program.

first year or two the laboratories had to continue turning out the familiar case and panel sequences. His guiding influence on some of these incorporated a degree of change, as in the case of the Fort Raleigh National Historic Site museum installed in 1966.

A new visitor center for Petersburg National Battlefield gave him the first opportunity to tackle one from the beginning. He established close collaboration with the architect of the building and called in a contract design firm for the mechanics of what he wanted as the focal point exhibit. The Petersburg museum opened in April 1968. It offered an exhibit room walled in the same dark brick as the exterior. Visitors mounted a ramp to a raised and partially enclosed central platform, from which they viewed a horizontal map of the siege operations animated with fiber optic lighting and synchronized, dramatized audio. Then they descended by a second ramp to the floor of the exhibit room. Large battlefield relics resting in an open moat around the central structure provided a stark mood display. Against the walls stood a few exhibit cases, some conventional in form but all purely topical in content. These few features comprised the museum exhibits.

Hendrickson spurred his growing staff of exhibit designers and planning curators into the new mode, not only by example but by advice and collaboration. Veteran in-house designer Edward Bierly welcomed the new exhibit concepts. Adapting readily to the wishes of the new leadership, he shared with Hendrickson innovative planning for the Lincoln Museum at Ford's Theatre. David McLean, a new designer, quickly introduced the preparation of design models in the exhibit planning process. Three new planning curators joined the branch staff during this period. Ellsworth R. Swift, formerly a park naturalist, transferred in 1966 from the U.S. Forest Service, where he had gone to work in its experimental Visitor Information Services program. In mid-1967 Keith A. Trexler also brought experience as a park interpreter. He served the museum development program with enthusiasm until early 1970. Robert F. Nichols transferred from Canyon de Chelly National Monument shortly after Trexler arrived. Contributing his solid anthropological background to a number of plans, he remained seven years before moving to the Denver Service Center. The exhibit design and planning group continued to expand to keep the preparation laboratories supplied with detailed plans for park museums that met the desired qualities of visual appeal and variety.

A division goal for 1965 challenged the Branch of Museum Development to experiment further with contracting for exhibit design. Contracting regulations forced the in-house planners to play an important role. They helped evaluate potential bidders, drafted careful statements defining the scope of work each contract would cover, and reviewed competing proposals to recommend those likely to produce a satisfactory plan. Each

contract typically required the designer to submit a concept for the proposed installation as the first phase. Staff planners studied this to see whether it would achieve the museum's intent. They might recommend acceptance, request a different approach, or suggest changes that the contractor could make as he transformed his creative idea into the finished plan and specifications. The final plan also demanded intensive review. Burdened with their own planning assignments, staff members sometimes felt that their part in the contracting process took as much time as they would have needed to design and specify the plans themselves.[9]

During the early stages of emphasis on contract design the Eastern Museum Laboratory moved for the fifth time, carrying with it the staffs of both museum branches. Mrs. Lyndon B. Johnson's campaign to beautify the nation's capital levered a decision by early 1966 to remove Temporary Building S and two adjacent structures from the Mall. Hendrickson undertook the search for new quarters. Knowing that his choice would also be temporary, he joined GSA officials in checking available and affordable rental space. They finally agreed on a light industrial building close to the Capital Beltway in Springfield, Virginia. The move took place during the first two weeks of September 1966.

The Springfield building had a number of disadvantages. Its distance from the director's office and reference sources in Washington made the frequent necessary contacts much more time-consuming. The new location, unreached by public transportation, forced many staff members to commute longer distances at higher costs. A specially installed vault door provided reasonable security for stored collections but not for offices and laboratory. Relative isolation from other federal offices minimized protection services. Employees of a cleaning firm had unsupervised access at night and on occasion left doors unlocked. The building lacked environmental controls that could meet standards for specimen preservation and the delicate work of conservators. In winter curators had to manipulate pans of water, wet towels, and electric fans on a daily basis in attempts to maintain reasonably satisfactory relative humidity levels in the vault. Conservators using cleaning solvents had to share the exhibit shop's paint spray booth to obtain tolerable ventilation. The staff accepted such conditions in anticipation that the laboratory would soon have a permanent home designed and built to serve its special requirements.

Out of the ferment generated in the new Division of Interpretation and Visitor Services had come an idea for housing the centralized creative aspects of interpretive development under one roof. The branches of Everhart's organization dealing with museums, audiovisual media, and publications shared many parallel projects and production schedules. They depended on similar skills in graphic design, writing, and other specialized talents. Yet in Washington they seemingly worked too far apart to

collaborate efficiently. The interpreters' conference that Everhart had convened in 1964 at Harpers Ferry contributed a locus to the dream of a consolidated interpretive design and production center. Vince Gleason's formulation of the proposal earned him a $400 award. Everhart agreed wholeheartedly and Director George Hartzog voiced strong support.

At a time when the federal government was looking for ways to dilute the concentration of its work force in Washington, the proposal to decentralize to Harpers Ferry found favorable reception. Economic conditions in West Virginia placed it high on the list of states considered eligible to benefit from such moves. The state had powerful representatives in Congress. And a suitable site there was available. Closure of Storer College at Harpers Ferry in the mid-1950s had led the Park Service to acquire its campus to protect the adjacent historical park. Two of the college buildings met the needs of the Mather Training Center and some other structures were demolished, leaving room for additional development. The training center, which then concentrated on interpretation, and the proposed design center seemed logical neighbors. Congress appropriated $650,000 to start the project in 1966. By January 1967 Everhart had contracted with Ulrich Franzen to design the new facility. That March the audiovisual branch moved to temporary quarters in one of the Storer College buildings, and near the end of August two exhibit planners from the Western Museum Laboratory in San Francisco moved their work stations to Harpers Ferry.

The western laboratory constituted a far from negligible part of the reorganized museum program, but fitting this distant component into the scheme posed problems. How could the division and branch in Washington transfuse the new design concepts and standards into exhibits planned and produced so far from the center of motivation? Could the budget support full workloads in both eastern and western laboratories without jeopardizing the kind of innovative and perhaps more costly developments anticipated? The western group had established an excellent record of efficient production, but various circumstances made it difficult to fund intractable overhead expenses.

The western shop continued to turn out exhibits during the transition, installing displays along conventional lines for the Mariposa Grove museum in Yosemite National Park and at Canyon de Chelly National Monument in October 1964. In December, three months after John Jenkins' death, Everhart wrote the western staff expressing his confidence in Floyd LaFayette's acting leadership of the laboratory but indicating that a search was underway for a permanent replacement from outside.[10] He followed up with a visit in January 1965 to explain personally the new thinking about park interpretation. March saw rejection of an exhibit plan for the Lodgepole visitor center at Sequoia National Park although it included some

imaginative proposals. During the balance of the year the laboratory installed exhibits in eight western park sites. The pace of exhibit planning slowed somewhat as two leading planners, Raymond Price and Paul Spangle, worked on special assignments for American Samoa and Jordan.

In early 1966, with the Harpers Ferry Center on the horizon, the Branch of Museum Development was directed to "prepare definite plans and schedules for phasing out the Western Museum Laboratory."[11] The first steps evidently consisted of closer contacts between leaders of the new exhibit approach and western laboratory personnel in efforts to influence their projects. The laboratory installed exhibits for five parks during the year. In June LaFayette was made chief of the laboratory, a deserved promotion after he had ably performed the duties of the position for more than two trying years. But his staff of planners, depleted by the resignation of Gerald Ober in February and Spangle's details elsewhere, still failed to provide the sort of new look Everhart hoped to achieve. Consequently the division chief wrote LaFayette in December 1966 assigning direction of all western laboratory planning and design to Hendrickson at the eastern laboratory, "effective immediately."[12] The western unit would henceforth concentrate on exhibit production. During 1967 it completed installations at Mount Rainier and Glacier national parks and Craters of the Moon National Monument and continued construction on several more projects.

Branch of Museum Operations, 1964–1967

The Branch of Museum Operations had a limited role in two aspects of the exhibit program. While the exhibit planners in the Branch of Museum Development decided what specimens they wanted to display, curators in Museum Operations still had responsibility for acquiring and authenticating them. These curators also systematically recorded both the transactions and the objects. Acquisition and authentication became Harold Peterson's primary duties as chief curator. Staff curators Vera Craig and Fred Winkler assisted him in locating and assembling the required specimens, and Craig accessioned and cataloged them. Although planners and preparators needed continual reminding to pass all specimens through the hands of the curatorial experts, the procedure worked for exhibits constructed at or contracted by the eastern laboratory.[13] The western laboratory could call on Peterson's services, but distance and his refusal to fly made close collaboration impractical. Laboratory curators in San Francisco gathered most of the objects used in the projects carried out there.

The Park Service museum development system, it will be recalled, created a corollary problem of maintenance. Exhibits of professional quality designed and built in central laboratories required equivalent artistic and craft skills to repair damage or make even minor changes. A park rarely

had such skills available from its local staff and needed expert outside help, generally from the museum laboratories. The exhibit maintenance problem intensified as the number of park museums grew, as wear and tear from spiraling visitor use increased, and as exhibit materials aged. New design concepts accelerated the obsolescence of older installations.

Park museums never achieved an ideal rate of rehabilitation or replacement, but three programs existed by 1964 for funding the most urgently needed work. The Branch of Museum Operations received an annual allotment to supplement park funds for maintenance and rehabilitation of physical facilities. Such money could finance exhibit repairs, small corrections, or revisions to and even replacement of a worn out or ineffective display as long as the work did not upgrade the facility or increase the capital investment. For more extensive exhibit changes the Branch of Museum Development received a lump sum of construction money for use on exhibits in existing buildings. Drastic museum revisions usually required programming as line construction items in the Park Service budget presented to Congress. Funds available under the three accounts never sufficed to perform all the jobs requested, so Museum Operations had the task of determining reasonable priorities.

In cooperation with the regional curators, the branch developed a weighted list of eight criteria to apply to an exhibit proposed for repair, alteration, or replacement.[14] Superintendents might use the criteria to set up a rational sequence for work needed in their museums. Regional curators consolidating the requests from many parks could make choices among them on the same basis. The criteria would apply again to fit the Service-wide exhibit maintenance program into museum laboratory schedules.

In the list as submitted the first criterion gave precedence to exhibits visibly deteriorating or out of working order, matters likely to be noticed by any visitor. Ranked second in need were exhibits that appeared hazardous or annoying to visitors because of faults in construction or placement. A display case, for example, might turn out to have a sharp corner at a child's eye level or bad reflections in the glass front. Factual inaccuracies came next. The fourth criterion moved ahead of the first three when the list was approved for use. This change responded to the emphasis then uppermost in interpretive theory by asking, "Does it [the exhibit] fail to communicate?" An answer to this question, in the absence of scientific testing, would rest on subjective judgment. Even the objective criteria required observation of the exhibits installed. The branch therefore supplemented this method of measuring need with a detailed, two-page Exhibit Room Inspection Checklist, filled out by staff curators during field visits.

Exhibits selected for repair or alteration had to be shipped back to the laboratory or wait until a preparator could travel to the park. As the

principal exception to this, replacement of faded or damaged photographs usually entailed only sending detailed information from the park. The laboratory could then obtain a duplicate print, mount it to exactly the same size, and let the park staff place it in the exhibit over the old one. Occasionally the laboratories could handle label replacements similarly. Nearly all repair and rehabilitation depended on precise data regarding materials, sizes, colors, and other details of the exhibit as originally produced. The branch therefore undertook to retrieve and systematically file old exhibit plans and much related material.[15]

Museum Operations at the same time shared with the parks concern for another phase of exhibit maintenance. Keeping exhibits and their immediate environment clean required conscientious care along with some special methods and precautions. The 1941 *Field Manual for Museums* had addressed the problem briefly, but the parks now needed more guidance. The branch thus began to prepare a new section of the *Museum Handbook*, Exhibit Maintenance and Replacement (Part IV), released in October 1968. The instructions it contained on cleaning procedures applied to situations common in most park museums. Introduction of varied new design solutions for each fresh project, on the other hand, tended to create special situations not amenable to general guidelines. The branch therefore began a sustained attempt to prepare an individual maintenance manual for each new museum installation.[16] In preparing such a manual the staff curator had to ask the preparator many questions about the materials used in the exhibits, methods of attachment, and access. These queries may have helped make the preparators, and possibly the designers, more aware of maintenance requirements.

Division of Museums, 1967–1973

William Everhart assumed the title of Assistant Director, Interpretation, late in 1967. His promotion briefly restored to interpretation the position of high visibility in the Park Service organization it had enjoyed under Assistant Director Ronald Lee from 1951 through 1959. The action also enabled prompt elevation of most of Everhart's former branches to division status. His new unit consisted of four divisions: Audiovisual Arts under Carl Degen, Publications under Vincent Gleason, Planning and Interpretive Services under Marc Sagan, and Museums under Russell Hendrickson.

The first two represented simple upgrading of existing branches with enlarged opportunities for internal subdivision. Planning and Interpretive Services combined the former Branch of Interpretive Planning that Sagan had headed with the Visitor Services Branch. The merger freed Douglass H. Hubbard, Everhart's principal aide, to devote full time as deputy assistant director.[17] The Division of Museums reunited operations and

development, giving them combined supervision by a museum professional for whom exhibits formed the principal focus. It left the Branch of Museum Operations essentially unchanged in scope and staffing except for the release of Chief Curator Peterson from his temporary administrative responsibility for the development program. The former Branch of Museum Development was split. The planners and designers became a Branch of Planning and Development with Ellsworth Swift as chief. A Branch of Exhibit Production headed by Frank Phillips comprised the preparation staffs of the eastern laboratory and, fleetingly, the western laboratory.

Although two years had passed since the decree to phase out the western laboratory, January 1968 found it still busy producing exhibits. No one knew when its work would terminate. Staff changes occurred, only partially motivated by the impending closure. The Western Region, needing a regional curator, acquired Edward Jahns from the laboratory in May 1967. Jahns had given the museum program three years of effective support at the laboratory and would continue to do so as a regional representative. His place was quickly filled by Vernon Tancil, an experienced curator from Independence National Historical Park. Gilbert Wenger, another stalwart curator the laboratory had relied upon in exhibit planning, stayed on for the remainder of 1967. Like Jahns he was an archeologist by training and could give expert help with Indian exhibits still in production and Indian artifacts on hand.[18]

Meanwhile Floyd LaFayette faced growing exhibit production problems. Exhibit plans prepared by the eastern staff and sent to the western laboratory for execution did not always fit the facilities and funding available. When a scheduling crisis brought these matters to a head in October 1967, he spelled them out in a memorandum to Everhart. Hendrickson responded with a prompt visit, bringing Andrew Summers to help search for fiscal solutions. Their inquiries perhaps added to staff concerns for the future. In January 1968 Gilbert Wenger accepted a transfer to Mesa Verde National Park while veteran preparator Bernard Perry took a job with the Navy. On February 8 the laboratory's landlord precipitated a decision.

GSA had long wanted to vacate the deteriorating Old Mint. Now it proposed to do so as soon as possible, moving the laboratory to a building at Fort Mason. LaFayette informed the director's office at once and received a reply overnight. Mildred Fleming, the laboratory's secretary, reported the event: "On Friday morning bright and early Bill Everhart was on the phone to inform us that he and Mr. Hartzog had decided to move the western lab to Harpers Ferry without more ado and we were ordered to get going. Such a day of shock and consternation!"[19] With a June 1 target date the complex job of closing the operation began quickly.

The months that followed were hectic. Dick Morishige oversaw the installation of exhibits for Glen Canyon National Recreation Area, and Reginald Butcher installed exhibits for Capitol Reef, El Morro, Natural Bridges, and Walnut Canyon national monuments. During March and April Herbert Martin, John Segeren, and Joseph Rockwell transferred to Harpers Ferry. The laboratory's administrative officer, William Acheson, went to Point Reyes National Seashore and Richard Anderson to an Army base. At the end of April Morishige and Mildred Fleming moved into office space provided by the Western Region, where they functioned temporarily as the San Francisco Museum Support Facility to supervise the unfinished exhibit contracts and tie up other loose ends. LaFayette with curators Tancil and Lina Carasso and probably one or two preparators continued the laborious task of readying everything at the laboratory for removal.

In mid-April LaFayette notified the director that the Western Museum Laboratory would officially terminate on May 10. LaFayette himself, tired from the stresses of closing the laboratory that had undoubtedly taken toll of his frail health, scheduled his departure for Harpers Ferry to take place as soon as he could settle his moving arrangements. On May 20, the eve of his intended start, he died unexpectedly at the age of 53. He had dedicated his creative talents to the museum program of the Service for more than 17 years.

Western laboratory staff who did transfer to Harpers Ferry found makeshift facilities awaiting them. Bids for construction of the projected Harpers Ferry Center were not opened until March 19. Ray Price and David Ichelson needed only desk and drafting table space when they arrived the previous summer, but Martin, Rockwell, and Segeren required additional room for more varied duties. The historical park and training center cooperated to provide work places, some in partially rehabilitated historic structures. Price and Ichelson functioned as an exhibit planning team on projects assigned by the Branch of Museum Development and its successor in Springfield. Rockwell as a graphic artist did exhibit layouts and pictorial elements requested by the eastern laboratory. Segeren had woodcarvings to complete for the Yosemite visitor center. Martin had been shifted from exhibits to administrative operations because his work had not satisfied the new design concepts. When he reported to Harpers Ferry, the Branch of Museum Operations became responsible for his assignments.[20]

From the management standpoint the museum staff at Harpers Ferry, remote from supervisors and timekeepers, formed an awkward appendage. To solve the problem, this outstation of the Division of Museums became by June 1968 the Harpers Ferry Museum Support Group, with Ray Price as leader. It acquired a secretary, Jean Cooper, and submitted monthly reports until the division formally moved from Springfield to the Harpers Ferry Center in March 1970. The group gradually increased during this period.

David H. Wallace, newly appointed assistant chief of museum operations, set up his office at Harpers Ferry in September 1968. Ichelson returned to San Francisco in April 1969, but later that year Daniel Feaser, Walton Stowell, Ralph Sheetz, and Robert Nichols moved their work stations to Harpers Ferry. Most of the group worked on exhibit planning and development, including a thorough revision of the twenty-year-old visitor center exhibits at Manassas National Battlefield Park. The presence of Wallace, on the other hand, assured a sound curatorial basis for future programs.

Wallace had succeeded James Mulcahy as curator for Independence National Historical Park in 1959 when Mulcahy returned to the Museum Branch in Washington. At Philadelphia Wallace developed and led the strongest curatorial team in any park. It excelled in the expert care of large and unusually important collections and the preparation of complex historic furnishing plans.[21] As a member of the support group he moved quickly to establish curatorial control over a miscellany of collections likely to suffer from neglect in an operation centered on exhibit design and development. They included all the specimens shipped from the Western Museum Laboratory as it closed, a considerable volume of material left by Storer College, and objects arriving for new projects. He set up careful inventories and safe storage while beginning sensible measures for relocating many of the specimens in more logical repositories. At the same time he assumed his share in the ongoing program of the Branch of Museum Operations still headquartered in Springfield. He arranged and taught in the 1969 curatorial methods course, collaborated in planning and budgeting for branch projects, provided curatorial leadership to the field, and helped prepare and review historic furnishing plans.

The other branches of the division in Springfield also carried full workloads while waiting for completion of the new building at Harpers Ferry. In 1969 the laboratory completed installation of the Army-Navy Museum at Independence National Historical Park. Funded by the Association of the United States Army and the Navy League of the United States, the museum occupied the newly reconstructed Pemberton House. With this dual sponsorship and a building of domestic proportions into which to fit exhibits, the project involved reconciling varied interests and constraints. Demands of the new design emphasis created severe collateral problems of specimen preservation, caused particularly in this instance by much too much light on historic flags. As well as building new exhibits, the laboratory was activating its circuit rider program for exhibit repair and rehabilitation.

Museum exhibits did not constitute the only development concern. Park needs for wayside interpretive devices grew to require a continual flow of specialized exhibitry. To handle it a new Branch of Wayside Development

was split from the Branch of Planning and Development late in 1968. Edward Bierly served as its chief until he retired in 1970 to free-lance as a wildlife artist rather than move to Harpers Ferry. Ray Price succeeded him. Margery Updegraff collaborated with Bierly and continued with the branch until she transferred to the exhibit program of the Library of Congress. Under Price the branch began to build its staff to keep pace with the demands of the rapidly expanding park system and to seek new solutions to the challenge of creating durable, versatile outdoor displays. Joseph Rockwell joined the new branch in October 1970 and Daniel Feaser followed at the end of the year. Both contributed strongly to the program until their retirement a decade or more later.

The Park Service during this period encouraged its program managers to compete for support in seeking increased funding. A division chief made his plea by means of an elaborately documented report defining and defending a specific "program issue." Russell Hendrickson undertook to present as an issue the seriously underfunded needs of park museums. Although small individually, in the aggregate they assumed impressive proportions. Hendrickson thus portrayed them as composing one great Museum of the National Park Service. A survey revealed that it contained about ten acres of exhibit space plus more than four hundred furnished historic rooms on display. Its study collections totaling several million specimens occupied more than 50,000 square feet. Statistics and photographs spelled out the Service's responsibility for one of the largest museum establishments in the nation. Its professional staffing and facilities could be measured against those of other big museums, and its shortcomings and critical needs stood clearly revealed. Although much staff time went into preparing the issue paper, issues presented for other programs gained precedence.[22]

Not at issue was development of the Harpers Ferry Center. As the new building neared completion, the Interior Department approved formal establishment of the center effective November 1, 1969.[23] This action abolished the position of Assistant Director, Interpretation, in the Washington Office. Everhart became instead director of the Harpers Ferry Center.[24] The memorandum of establishment assigned HFC five divisions. In addition to the interpretive design and production divisions—Audiovisual Arts, Museums, and Publications—these included a new and necessary Division of Administration and General Services and a Division of Environmental Projects. The last simply provided an organizational focal point for special task forces during a period when the Service gave more than normal emphasis to ecologically responsible policies and actions.[25] The building to house HFC did not become ready for occupancy until the end of the year. Even then Everhart and his staff spent the first two weekends of January 1970 painting the bare block walls of the interior.

In choosing the architect for the center's building Everhart had noted in particular two of Ulrich Franzen's special skills. He could express the modern design idiom in traditional materials—standard brick and cement block—and in so doing could achieve maximum functional space at minimal cost. The center would require his best efforts in the latter regard in spite of its reasonably liberal funding. Franzen set the three-story structure partially into the rim of the ridge-top site. When finished it succeeded in looking thoroughly modern while not clashing seriously with its older campus neighbors. The interior reflected ideas of architect and principal client on how the center should function. The only conventional offices in the building consisted of those for the director and his division chiefs. These were grouped at one end of the main floor around an open work space occupied by the director's secretary and her assistants. Cubicles on the periphery of the upper floor gave a modicum of quiet isolation to writer/editors and a few exhibit planning curators. Audiovisual Arts had half the lower floor cut into rooms for its technical needs. Practically all the remaining work area, for museums and publications on the upper floor and for exhibit production on the lower, Franzen left open. These arrangements functioned well as planned for the most part.

The building did suffer from one error in judgment. The idea that the creative teams would work best in undivided spaces proved impractical. Soon temporary partitions of various kinds began to invade the open areas. Another aspect of the building that later required change involved factors the architect could hardly have foreseen. The energy crisis of the mid-1970s rendered the operating costs of the forced ventilation heating and cooling system unacceptable. Modifications necessary to make the structure energy efficient cost much in turn. From the standpoint of the museum program, however, the principal fault of the new interpretive design center lay not in these shortcomings but in some deliberate omissions.

One of these concerned the provision for exhibit production. The lower floor contained two large adjacent undivided areas for this activity. The area next to a soundproof wall separating exhibits from audiovisual production housed the preparators working on graphic elements and labels and included upgraded equipment for silkscreen operations. The other area allowed for exhibit assembly, the critical job of mounting specimens with their accompanying graphics and labels, then preparing all the units of a project for shipment to the intended park. This section of the new laboratory had a spacious paint spray booth with powerful exhaust and a well-designed loading dock. The proper accommodation of these functions left no room for the essential, if noisy and dusty, business of fabricating the exhibit background panels, cases, and special constructions every project involved. Left out of the new building, exhibit construction had to borrow and adapt space in the park's maintenance shops. This awkward arrange-

ment complicated supervision and coordination. Each panel, case, and special device also had to travel by truck about four blocks to the exhibit assembly area in the new building to be finished and incorporated with the elements there before exhibits were ready to pack and ship. Four years later the maintenance building was enlarged to give the exhibit construction shop more space, but this did not eliminate the disadvantages of separation.

Museum Operations keenly felt the inadequacy of one important facility in the new building and the omission of another. The branch had asked for a proper specimen storage room or vault at least as secure as the one it would leave behind in Springfield. Hendrickson, thinking primarily of exhibit preparation, specified instead the provision of a few standard specimen cabinets mounted on a specially built dolly in the exhibit assembly area. He conceived the problem in terms of specimens coming in for a park museum exhibit project, being prepared and mounted in the laboratory, then being shipped out to the park with the finished exhibits. His solution discounted the problems of accountability, preservation, and security. It also failed to consider that not all the specimens received would fit into standard cabinets or follow the same routine.[26] As a result, the curator responsible for receiving, accessioning, and cataloging all specimens, checking their condition and authentication, arranging for their cleaning, repair, or preservative treatment, issuing them to designers and preparators for placement in exhibits, and assuring their safe shipment to the parks had to carry out these vital duties under considerable difficulty. The specimens stored under only moderate security in the open shop were two long flights of stairs below her work station. An electric dumbwaiter enabled her to transport objects a few at a time, but could save no steps. Vera Craig gave the specimens the best care possible under these adverse circumstances, but at the cost of much extra effort.

The decision on specimen storage had been reached openly after full discussion. Omission of another facility was unannounced. The branch operated several small laboratories for the conservation of museum specimens, each with special requirements dictated by the kinds of objects treated. It had submitted to the architect specifications for these, as requested. Members of the architect's staff inspected the existing facilities at Springfield and discussed the technical requirements of the conservation laboratories in some detail. It therefore came as a surprise that the architect did nothing with the information. While the branch hardly hoped to get the laboratories into the new building, it assumed he would adapt space for them in an adjacent existing structure. The lack of essential facilities delayed the move of the Division of Museums to Harpers Ferry.

The division did transfer its base of operations formally to the Harpers Ferry Center in March 1970. It left a few of the staff at Springfield until Hendrickson could get space assigned and renovated for their shops and

laboratories. Others remained behind on a more permanent basis. Chief Curator Harold Peterson had adamantly opposed the Harpers Ferry move from the outset. His work involved maintaining close contacts with material culture specialists in Washington and others from a distance whom he regularly hosted on their visits to the capital. His personal collection of arms and armor with its accompanying library served as a magnet to visiting scholars and collectors. The provisions he had made for the study and security of the collection in his suburban Washington home tied him to that as his place of residence. His health ruled out the possibility of commuting from there to Harpers Ferry.

Distance also made it impractical for anyone stationed at Harpers Ferry to carry on the almost daily use of reference sources in Washington upon which exhibit planning and preparation had depended heavily for many years. Marilyn Wandrus and research historian Lee Wallace therefore stayed on in Springfield to gather the necessary factual and pictorial data and relay them promptly to the new center. Peterson could supervise their work and also a collection of museum objects that had accumulated. The collection, considered to be in temporary storage and for which no space had been provided at Harpers Ferry, had grown to a point that demanded the custodial skills of a registrar.[27] When the curator attending to it moved to Harpers Ferry with the Branch of Museum Operations, Ron A. Gibbs joined Peterson's staff in this capacity. Gibbs had been a battlefield park historian and brought energetic interest to the task, although his concern centered more on the specimens than on their detailed recording and management. The Division of Museums organized these workers into a Branch of Curatorial Services with Peterson as chief.

After the museum branches had moved to Springfield in 1966, Hendrickson had recruited two secretaries who lived nearby and wished for part-time employment. Frances Ward and Doris Barber served the division efficiently while it remained there but had no intention of transferring to Harpers Ferry. Hendrickson kept them on duty at Springfield, where they continued to maintain the division's correspondence files, provided him supplemental secretarial support, and supplied such needs for the Branch of Curatorial Services. Their presence gave Hendrickson a base near his home where he could stop briefly en route to and from Harpers Ferry to leave instructions or pick up finished work. They also facilitated the consultations his assignments required with other agencies in the Washington area. Although it became necessary in November 1971 to move the Springfield activities to another light industrial building in the same development area, this Harpers Ferry outstation continued to function. The inconveniences of operating in two places some fifty miles apart exemplified the less advantageous aspect of the Harpers Ferry move for the museum program in particular.

Such stresses for the Harpers Ferry Center as a whole fell most observably on its director. Everhart's enthusiasm gave the center a running start, reinforced by the stimulus of new facilities and the interdivisional environment they provided. Increasing demands for his talents in the Washington directorate soon forced him to divide his time and attention between Washington and Harpers Ferry. As deputy director of HFC, Douglass Hubbard filled in for him until late 1970, then left to accept the directorship of the Admiral Nimitz Center (as now designated) in Fredericksburg, Texas. Able to spend less and less time in his Harpers Ferry office, Everhart thereafter used Marc Sagan to act in his absence as a committed advocate of his interpretive ideology.

The Branch of Exhibit Development, called Exhibit Planning and Development previous to the move, began operating as an HFC unit under Ellsworth Swift as chief. Its three designers, Daniel Feaser, David McLean, and Walton Stowell, continued the projects they had been working on in Springfield or with the support group at Harpers Ferry. Their curatorial counterparts were Robert Nichols, who carried an added responsibility for a new traveling exhibition program, and Saul Schiffman, an experienced park naturalist replacing Keith Trexler. Forrest Meader, a historian with museum experience outside the Service, soon joined the branch as a third staff curator. In October 1970 Robert G. Johnsson, an interpretive planner of outstanding ability, transferred from Sagan's division to become senior staff curator. He would lead the Service's museum exhibit planning with increasing authority throughout the remaining period covered in this study. James Mulcahy also served in this branch, lending his wealth of experience to the vital task of project management. His steady hand coordinated the multiple activities of planning and production branches with those of contractors to ensure the timely and successful installation of such complex projects as the American Museum of Immigration at the Statue of Liberty as well as tightly scheduled museums for Bicentennial parks. The branch added Sois Ingram to this basic staff as designer when Feaser transferred to the new Branch of Wayside Development. Richard H. Strand, who had worked as an exhibit planner at the Jefferson National Expansion Memorial under Gilbert Wright, joined the branch in February 1971. When Schiffman accepted an interpretive planning assignment at the National Zoological Park in the spring of 1972, Lige B. Miller, Jr., filled the gap as staff curator.

The Branch of Exhibit Production experienced greater personnel changes. Frank Phillips continued as chief until September 1972. Realizing that a number of the veteran preparators would not move to Harpers Ferry, he began recruiting at Springfield. Among the artists and craftsmen the branch would lose were such valued workers as Kenneth Dreyer, Willie Liggan, Arlie O'Meara, Robert Scherer, and William Smith. It would retain

as mainstays of the operation Peder Kitti, Olin Nave, Frank Spagnolo, and Donald Swain. New employees broken in at Springfield with Harpers Ferry in mind included Bond J. Browning, Robert A. Fulcher, Clifton Funkhouser, Harry H. Harris, Joseph Leisch, and Paul Webb. Already at Harpers Ferry, Joseph Rockwell and John Segeren from the western laboratory and Frederick B. Hanson would augment the staff. Added at the time of the move or soon after were Robert L. Ainsworth, Walter H. Bradford, Ronald Dunmire, and Mary Herber. Somewhat later Phillips hired Vincent Marcionetti, and Ralph Warriner replaced Ainsworth as a transporter of exhibits to parks throughout the country. During Phillips' tenure the branch executed difficult and innovative work for the American Museum of Immigration, the Indian Arts Museum at Grand Teton National Park, and numerous visitor centers of more normal scope.[28]

Phillips also gave particular attention to problems of exhibit maintenance and replacement. By sending out preparators from the branch staff as "circuit riders" he got a hundred exhibits in ten visitor centers expertly repaired on site during the 1969 fiscal year. This effort to keep up with exhibit rehabilitation needs fell short because he could not spare enough manpower for such extra assignments and sustain the full schedule of new exhibit preparation. In September 1972 Grant A. Cadwallader, Jr., a Park Service architect, replaced Phillips as chief of the branch. Phillips in turn became contract manager for the growing number of exhibit projects being produced by shops outside the Service. As one of his first initiatives in the new job he negotiated a network of term contracts with exhibit production firms in various parts of the country to repair or rehabilitate exhibits for the parks on demand. A superintendent could call on the nearest contractor to do the specialized work required to keep his exhibits functioning. The term contractors supplemented and in time largely supplanted the circuit riders from the central laboratory.[29] This decentralization allowed the Branch of Museum Operations to spend less effort on programming exhibit maintenance.

Museum Operations also experienced significant staff changes during the 1967–73 period. As noted, the branch gained the expert help of David Wallace as assistant chief in 1968, and Herbert Martin was assigned to its staff when he transferred from the western laboratory to Harpers Ferry that year. In February 1970 the branch lost through retirement the highly valued services of staff curator J. Fred Winkler. He was replaced that November by Robert W. Olsen, formerly park historian at Whitman Mission National Historic Site. Branch secretary Thelma Wolfrey McDonald found it impractical to move to Harpers Ferry, and Jean Cooper succeeded her when HFC absorbed the Museum Support Group at Harpers Ferry.

Branch chief Ralph Lewis retired at the end of May 1971. Wallace was promoted to the vacancy in July, enabling the branch programs to maintain

momentum and assuring curatorial leadership of professional caliber. He obtained a new assistant chief for the branch in December from the interpretive planning staff. His choice, Arthur C. Allen, welcomed the opportunity to help manage museum operations. A geologist by training and an experienced park interpreter with graduate work in park management at Michigan State University, he had demonstrated vision and incisive analytical skills as a planner. He brought the branch vigorous managerial aptitudes as well, and at a critical time. The branch's need for work space left out of plans for the new Harpers Ferry Center had become unmistakably evident.

The substitute spaces HFC belatedly rehabilitated for branch use soon proved inadequate. By December 1970 the paintings conservator moved into a makeshift laboratory in the park's historic Morrell House. An adjacent room even less well adapted for the purpose became a laboratory for a newly appointed paper conservator. The branch intended to use the basement rooms of the historic Armory Paymaster's House for other specialized conservation laboratories, but when it became available early in 1972 a more urgent need was evident. Suitable workrooms and storerooms were essential to establish control over the increasing flow of museum specimens to and from HFC. Many important objects from many sources continually arrived, some in dire need of preservation, some for incorporation into exhibits for the parks. Each required precise tracking through the processes of receipt, unpacking, examination, preservative treatment or restoration, exhibit design and production, and the intervening periods of storage before final repacking and shipment. For this purpose the branch set up a new position and hired David E. Warthen from HFC's administrative division as registrar. His reliability as a record keeper, insistence on following proper procedure, and expert care as specimen handler and packer would significantly improve the protection of the objects from damage or loss. Warthen entered on duty in February 1972, but with insufficient facilities distant from most phases of the procedure he monitored.

As of April 1972, Museum Operations was trying to function with its staff scattered among five buildings and specimens stored in eight separate locations, all far from ideal. Allen wrote Everhart to propose a solution. The sixty-year-old Shipley School building, conveniently near the new HFC building and soon to be vacant, could house the entire branch under one roof. Allen offered to use the branch's funds to rent the building, at least for the first year, and give up the space the branch occupied in the HFC building. The school had many defects, but Allen presented feasible plans for correcting them. His energetic and skillful defense of the proposal succeeded: the government rented the building when school closed for the summer. Essential rewiring, installation of new lights, interior painting,

and other needed work started on the heels of departing students. By July the branch started moving in. Work on the building and its proper equipment would continue through the next decade and beyond, but old Shipley proved its worth as an efficient focal point for the curatorial needs of park museums.[30]

Other initiatives engaged the Branch of Museum Operations during the period under discussion. The need to provide specific training for people charged with taking care of museum collections in the parks had again become all too apparent. The Mather Training Center accordingly agreed to schedule and underwrite a five-day Curatorial Methods Course in the spring of 1969 in lieu of the longer Museum Methods Course it had displaced after the 1964 session. David Wallace shouldered the main load of preparing the content and instructional plans in consultation with the training center staff. The center provided general supervision, logistical support, classrooms, and dormitory and paid travel and per diem costs. Branch staff ably reinforced by regional curators supplied most of the instruction. Unlike the older course, Curatorial Methods concentrated on the care and management of collections without considering their interpretive use.

A class of twelve attended the 1969 session. Sufficiently impressed by the quality and urgency of the training, the training center scheduled the course again in February and December 1970, with the class about doubled in size. In 1971 the center had to cut its training programs, but it offered Curatorial Methods again in December 1972 and October 1973. By the latter session the class had grown to more than thirty trainees. Geoffrey Stansfield, on sabbatical from the Department of Museum Studies at the University of Leicester, England, and several other outside experts instructed on special topics. Art Allen took over the course planning and preparation chores from Wallace, who had other pressing demands on his time.

Harpers Ferry Center's divisions had brought with them the books and professional journals they used on a regular basis but left behind the more extensive reference sources they had found it convenient to consult in Washington. The holdings of the separate divisions supplemented one another to some degree but also overlapped, and there were many gaps to fill. As divisional collections they remained largely inaccessible to the other units. To rationalize this chaotic and wasteful situation HFC's management appointed Wallace chairman of a library committee in September 1970.[31] Under his leadership the center developed in time a professionally staffed, well-equipped central library with control over specialized satellite collections in offices needing them. Wallace enlisted the expertise of the Interior Department's library to catalog the existing holdings and organize procedures for continued orderly growth.

Everhart also drafted Wallace for a project supported by George Hartzog designed to create a National Park Service archives. It would not duplicate the role of the National Archives but save in usable form many significant documents produced in the course of Service activities that did not qualify for retention as official records. Accepting the challenge with sincere interest, Wallace helped establish guidelines and assess material on hand. By January 1972 he started assembling documents from park files. That July he recruited from the field Richard W. Russell, Carl Russell's son, as full-time curator of the archives. The Branch of Museum Operations allocated a room in the old Shipley School building where Russell could assemble and organize the growing collection. Ten months later Wallace reminded Everhart that the branch was paying all costs from its overhead account and advised him that the project would require specific funding of at least $40,000 annually to continue at its current level.[32] Such expanding programs under Everhart's leadership kept the entire Division of Museums at full steam during the 1967–73 period.

Division of Exhibits, 1974–1980

Reorganization of the Washington Office under Director Ronald H. Walker, George Hartzog's successor, took effect in October 1973. Everhart became again Assistant Director, Interpretation, headquartered in Washington. As such he retained line authority over Harpers Ferry Center but gave up active management of its operations.[33] This function devolved upon Marc Sagan, who advanced to the position of HFC manager. He was succeeded by Alan Kent as chief of interpretive planning.

Sagan announced his plans for reshaping HFC's organization two months later. He split the Division of Museums in two while absorbing two of its longstanding functions within a new branch organizationally quite separate from the core of the museum program. A Division of Exhibits with Russell Hendrickson as chief contained three branches: Exhibit Planning and Design under Robert Johnsson, Exhibit Production still under Grant Cadwallader, and Wayside Exhibits similarly under Ray Price. The former Branch of Museum Operations metamorphosed into the Division of Museum Services, headed by Art Allen. In the process it lost its role in historic furnishing policy and planning but resumed responsibility for museum clearinghouse affairs (although not immediately). Furnished historic structure museum planning and procurement, the former Branch of Curatorial Services in Springfield, the HFC library, and the Park Service archival program were lumped together in a Branch of Reference Services. Conceived of as responding to the needs of the center as a whole, which was true only in part, it fell under program management rather than museums in the organizational scheme. Wallace, the staff member best

qualified to direct development in several of these fields, agreed to serve as chief of the new branch.

These changes occurred while the center carried a heavy load of American Revolution Bicentennial development projects for the parks. In reviewing what the Division of Exhibits accomplished during the 1974–76 fiscal years, Hendrickson cited impressive totals. The Branch of Exhibit Planning and Design provided exhibit plans for 92 museums. Exhibit Production accounted for 45 museums installed. Wayside Exhibits planned and produced fifty projects. These figures included the work of contract design and exhibit preparation firms, but such contracts required substantial time and effort by division staff. New visitor centers constructed at Independence, Minute Man, and Morristown national historical parks involved exhibit planning and preparation, and practically every existing museum in other parks associated with the Revolution underwent complete transformation to meet current interpretive concepts. Wayside exhibits in these parks also received fresh treatment in many instances.

At Independence, Franklin Court exemplified several characteristic aspects of Bicentennial development. The long-neglected site of Benjamin Franklin's home enlisted the creative concern of the Division of Exhibits in collaboration with historical architects, archeologists, contract design and production companies, and park, regional, and service center staffs. Among numerous interpretive components of this site development two stood out as truly innovative.

The historical architects used one of the 18th-century buildings facing Market Street to demonstrate brilliantly how an old structure preserves the record of its past and how architects, archeologists, and historians can painstakingly decipher the evidence. They retained intact the original walls of the building. From freestanding viewing platforms linked by stairs within the interior void, visitors could examine the structural evidence that revealed where floors, partitions, hearths, and other features had once existed. Artifacts and brief labels mounted nearby pointed out and helped interpret the structural clues. This direct approach challenged the viewer's intellect, apparently with signal success.

Archeologists had located the foundations of Franklin's house in the center of the court, but details of the structure's appearance were unknown. Rather than reconstruct a hypothetical building, the architectural firm of Venturi, Rauch, and Scott Brown chose to outline the form of the house over the foundations with stainless steel members. Paving stones, some engraved with verbal evidence, marked room locations. Viewing windows into the excavated foundations below revealed primary evidence. Again visitors could sense the authenticity of the presentation. Many found it a moving and enlightening experience.

A third component of the Franklin Court development stood in contrast to these two examples of studied restraint. A largely underground museum to interpret Franklin's life and role occupied one side of the court. It employed a mixture of current display devices such as bright lights and colors, animation, and recorded sound. Franklin would no doubt have been impressed with their novel mechanisms if not with their communicative effectiveness.

The division had other important projects to complete. The Museum of Westward Expansion beneath Saarinen's Gateway Arch at St. Louis finally opened in 1976. Complete revision of the Kilauea museum at Hawaii Volcanoes National Park and the historic Yavapai observation station museum in Grand Canyon National Park illustrated a Service-wide replacement program. Hendrickson pointed out in 1975 that 230 exhibit installations in the parks were at least 15 years old with more becoming obsolescent or outworn at a calculated rate of 22 per year.[34] But two new projects intrigued him especially, both involving Service response to the Indian rights movement.

With many prehistoric and historic Indian sites to preserve and interpret, the Service had a longstanding commitment to the cultural heritage of these peoples. During the 1970s Indian rights activists questioned the display of prehistoric human remains and objects deemed sacred. Conflicting scientific and cultural obligations had to be reconciled.[35] In general the Service removed human remains from exhibit in park museums and consulted with tribal representatives about the display of sacred objects. Even so, militant activists might not agree with decisions jointly reached.

At the new visitor center at Big Hole National Battlefield, Indian and white visitors would surely put to the test the fundamental rule that museum exhibits should present facts without trace of bias. The Big Hole museum should help all visitors understand what took place and assess fairly not only the causes and results of the battle but the sagacity and valor of the opposing combatants. The exhibits included prime specimens, some borrowed from the U.S. Military Academy museum at West Point. The park feared that dissident activists might try to claim possession of certain objects, and the division specified extra security measures in exhibit case design. Someone did break into the museum and penetrate an exhibit case, but it proved to be a drug user seeking a smoking implement, which the museum later recovered.

The second project that especially interested Hendrickson was a traveling exhibition of fine artifacts addressed to native groups lacking ready access to museums. Indian Pride on the Move, a large tractor-trailer modified to provide a safe environment for objects, carried specimens from the collection that had supplied Grand Teton National Park's Indian art

museum. The venture deeply involved curators and conservators in the Division of Museum Services as well as the Division of Exhibits. Manned by an Indian crew, the exhibition traveled successfully to reservations and neighboring communities in the western states during the summers of 1976 and 1977.[36] It was an expensive variation on the traveling exhibitions of paintings and photographs relevant to the national parks that the division and its predecessor had been circulating widely since 1968.

Throughout the 1974–80 period the Branch of Wayside Exhibits had all the planning and production work it could handle. While the staff continued to seek and try new ways to make outdoor exhibits more durable and versatile, it concentrated production on three well-tested types. Cast aluminum panels had proved sturdy and relatively easy to maintain, although the medium imposed limits on the designer. Etched aluminum panels could reproduce fine pictorial detail and text in lasting form but with very restricted color range. Silkscreened artwork and label copy laminated in weather-resistant plastic sacrificed ruggedness to gain much broader design potential. By screening multiple copies to laminate as needed the method allowed for inexpensive replacement.

The need for new museum exhibits in the parks required greater production. Two branches responded by hiring more staff. By mid-1978 Wayside Exhibits had expanded to eight professionals plus clerical support. Of its veteran artists, Daniel Feaser retired in 1980 and Joseph Rockwell in 1983. Exhibit Planning and Design by 1980 had 14 or 15 planning curators and designers, almost double the number in 1975. James Mulcahy retired in 1980 but returned to work for a time as a reemployed annuitant. Thirty-four people worked for the Branch of Exhibit Production in 1978, the majority of them career preparators. Of these Peder Kitti retired near the end of the period under review. Hendrickson made effective use of temporary and part-time workers in this branch, which also increased production by organizing project teams across specialist lines and by effective use of three thousand square feet of space added to the shop in the park maintenance yard. The Division of Exhibits as a whole during its very busy six years supplied the parks with a flow of new exhibits surely creditable in volume and quality.

The daily files of the division reveal, on the other hand, repeated glimpses of diverging opinions between its chief and HFC management. Perhaps thwarted in hopes for stronger development of park museums, Hendrickson chose to retire early in 1980.[37] The center did not fill his position. Instead it raised each of the three branches to division status, letting them operate independently without a museum professional as their common leader. They remained strong in staff who understood park interpretation and display methods from solid experience but lacked corresponding strength in the theory and practice of museum work. This

imbalance contributed to later changes that greatly reduced actual production of museum exhibits at HFC.

Branch/Division of Reference Services, 1974–1980

Creation of this branch fragmented to a further degree the museum responsibilities of the Harpers Ferry Center. It also removed David Wallace from the larger areas of the center's museum concern. Wallace was one of the few staff members who possessed a broad curatorial understanding based on sound professional experience in museums outside as well as within the Service. He would put this experience to good use, to be sure, in managing two distinct museum activities that accompanied the strictly reference services. To help with the latter he soon secured a professional librarian, David Nathanson, to devote full time to the equipment, organization, growth, and operation of the center library. Nathanson proved highly capable of this and later of supervising what came to be known as the National Park Service History Collection.

The museum aspects of the branch task involved the work of Chief Curator Harold Peterson and furnished historic structure museums. With Wallace administering the branch Peterson could focus on pressing Bicentennial curatorial matters. With William L. Brown's help, he advised on an ambitious and complex project to reproduce rare cannon for Revolutionary War sites. He also provided guidance to projects supplying accurate costumes and accessories for "living history" presentations in numerous parks. At the same time he continued his basic responsibility of leading procurement and authentication of specimens for park museum exhibits. In the latter work he still had good help from his colleague, Lee Wallace. Throughout this busy time Peterson battled severe chronic illness. With his death at the age of 55 on New Year's Day 1978—the day after he retired—the Service lost its most widely known and respected curator.

For the second museum activity assigned to the branch, furnished historic structure museums, David Wallace took direct responsibility. The following chapter will consider these special museums in more detail. Suffice it to say here that he started single-handed. A few months later staff curator Vera Craig transferred from Museum Services to work on the preparation of furnishing plans. In addition Wallace assembled a small staff of experts trained for the most part in the respected Winterthur program.

In 1976 Reference Services rose from branch to division status, perhaps reflecting a clearer appreciation of the scope and importance of the roles it encompassed. Four years later the division chief was able to establish three branches within the division: Graphic Resources, Historic Furnishings, and Library and Archival Services. He then made the difficult choice of early retirement when family needs took precedence over professional

interests. Again HFC did not fill the vacant position of division chief. A reorganization in 1984 made Historic Furnishings one of HFC's eight professional divisions and redesignated the other two units as an Office of Library and Archives under Nathanson and an Office of Graphics Research under Marilyn Wandrus. Concern for museums beyond their function as one among several interpretive media available to the parks meanwhile rested increasingly in Museum Services.

Division of Museum Services, 1974–1981

When Art Allen became chief of the new division, he clearly saw urgent curatorial needs facing the Service. David Wallace had opened his eyes to them during the two years Allen worked as assistant chief of the Branch of Museum Operations, and he had started on practical measures to address them. He had come to realize that in its museum collections the Service had a resource whose value was understood by few managers, and he was in a position to know in general how far short of its declared curatorial standards the Service had fallen. In seven years as division chief he tightened and extended practices not only at Harpers Ferry but widely in the parks.

The interrelated range of programs attacking various aspects of the problem accomplished an essential corollary objective. By 1979 top management had become more fully aware that park museum collections constituted a scientific and cultural resource of impressive value for which it held prime responsibility. The directorate in Washington and the regional offices along with superintendents in the parks consequently increased attention to and support for the assessment, protection, and care of specimens. This in turn made possible substantial improvement in the amount and quality of curatorial effort Service-wide.

The division actions that bore such fruit began on a smaller scale. One program aimed to establish proper accountability for specimens held temporarily at Harpers Ferry Center.[38] The appointment of a full-time registrar, David Warthen, had begun the process. Allen assigned Warthen one of the classrooms in the old Shipley School and equipped it for this specific function. A small office built into the room housed the records kept on all museum objects entering and leaving HFC custody. The remainder of the classroom was furnished with locked specimen cabinets. An adjacent room, the largest in the building, became additional space for keeping specimens in a well-organized manner. A third room made special provision for paintings on sliding screens and prints in cabinets. Warthen thus had the means for systematic, secure specimen storage under his immediate control. Allen negotiated written procedures with the Branch of Exhibit Planning and Design to ensure that all specimens it called for came first to the

Arthur C. Allen. Chief, Division of Museum Services.

registrar. Corresponding procedures applied to the Branch of Exhibit Production and to the conservators.

Through decades of operation the museum laboratories had accumulated a backlog of specimens sent in from parks for various reasons. Allen instructed Warthen to check every object on hand against existing records. If a specimen was not required for a currently scheduled project, the registrar returned it to the park. This exhaustive review of older transactions gave the records in his care a high degree of reliability. In returning objects Warthen also made himself an expert in secure packing. When he requested museum material from the parks he regularly included suggestions on how to pack and ship the objects safely, and he gave packing demonstrations to trainees at the Curatorial Methods course. The documentation that accompanied specimens sent back from the center also helped remind parks of their records responsibility.

In its concern for another category of objects the division focused wider attention on accountability. Allen worried about the scant documentation the museum clearinghouse at Springfield appeared to keep for its exchanges of Park Service artifacts with collectors and dealers.[39] As soon as responsibility for this operation shifted to his division, Allen recruited an experienced curator from one of the Army museums and placed him in charge. Beginning in 1978 the curator, H. Dale Durham, oversaw the physical transfer of the collection first to rented warehouses in Brunswick, Maryland, and Charles Town, West Virginia, then mostly into coveted space at Harpers Ferry released for this purpose by the secretary of the interior.[40] With Roger Rishel as a temporary assistant Durham got about 5,000 specimens into safe, orderly storage where the clearinghouse could function with reasonable efficiency. He also verified the processes whereby the clearinghouse could legally carry out its functions of removing unneeded objects from park museum collections and obtaining needed ones in exchange. Based on this study he drafted a procedural manual for

Service-wide clearinghouse operations. Meanwhile the division registrar accessioned the clearinghouse specimens in full detail, laboriously ferreting out missing data on artifacts and transactions. With this vital information in hand the clearinghouse could again anticipate actively serving park museum needs in the refinement of collections.[41]

One of Durham's inquiries along the way helped spotlight the spreading realization of being truly accountable for museum collections. Following discussion an Interior Department attorney wrote him, "You are correct in being concerned, not only because of the obvious practical need to account for a multi-million dollar collection, but also because accountability is legally required by statute and regulation."[42] The admonition referred specifically to national park museum collections as a whole and so pointed to practically every park superintendent. Ripples from such a reminder doubtless reached managers and curators at many levels. In 1981 the Justice Department's inspector general in response to some complaint found that property accountability for museum collections in the Service's National Capital Region, including Harpers Ferry National Historical Park, was clearly inadequate. The region had to take prompt action. The proximity of the park gave Allen an opportunity to set up a mutual training exercise in which the Division of Museum Services would help the park staff carry out the inspector general's requirements.

Allen's carefully planned attack on National Capital Region's problem of thoroughly accounting for a park's collection began in January 1982. Selected members of the division and park staff formed a team of at least eight workers who would spend at least two days a week on the task until it was judged completed. The team checked every accession record, visually established the presence of every specimen, cataloged all uncataloged specimens, updated location data, weeded out objects inappropriate to the park's defined mission and arranged for their proper disposal, and worked out practical solutions to longstanding questions of improved environment or security for exhibit and storage areas. After twelve weeks of sustained effort the division could step aside leaving the park with clear instructions for tying up a few time-consuming loose ends, such as two hundred hours worth of typing catalog records.[43] The drive to achieve Service-wide museum collection accountability continued throughout the period of this study and beyond.

The Division of Museum Services pursued several training initiatives for park staffs who had to record and care for collections. As the primary one it continued the Curatorial Methods Course described above. This collaborative effort with the Mather Training Center provided a week of intensive study and practice to approximately 24 Park Service employees at each session. A few trainees from parks and museums outside the Service increased the class size to about thirty and introduced a broader range of

experience that regularly enhanced instruction. Each year the division chief had to fight for funding the course. He also personally invested much time and thought in this ongoing program, as did many of his staff. Consequently the course evolved in substance and technique from year to year.

One significant change, aimed to strengthen the coverage of natural history collections, brought Christine Schonewald-Cox of the Service's science and technology staff into the cadre of instructors beginning in 1980. Her participation underlined the real importance of these often slighted collections. It also contributed authoritative knowledge and valuable insights on the proper care of scientific specimens. She and her colleagues, Jonathan Bayless and Timothy Halverson, continued to provide expert help to the curatorial programs. Near the end of Allen's tenure Curatorial Methods became one of Mather Training Center's routinely programmed courses and beginning in June 1983 its length was increased to two weeks.

Because only a fraction of candidates in need of the training could be accommodated at Mather, the training staff suggested a more concentrated course offered on a regional basis to reduce travel costs. By mid-1981 the division had provided key instructors for five sessions, such as a three-day Basic Curatorial Accountability and Collection Management Course at sites selected by the regional curators. Regional curators also organized additional courses, notably in the North Atlantic Region, which had more than its share of museum collections in need of knowledgeable care. In 1981 Regional Curator Edward Kallop developed a Museum Technician Training Curriculum in collaboration with the New England Museum Association. A single qualified instructor, Edward McManus, from the regional staff met with the trainees one full day a week for ten weeks. Between class sessions the trainees had assigned homework. The instructor presented the course first to museum workers from parks in the Boston area, then repeated it for those in and near New York City.[44] The region followed this with a Collection Management Conference, to which the division sent participants.

Technical aspects of caring for museum collections required training in more depth than the basic course at Harpers Ferry allowed. To address this need Allen proposed a follow-up course, Curatorial Methods—Phase II, which the training center agreed to support. Under Phase II individuals returned to Harpers Ferry for a further week. Each trainee reported to a key conservator in the division laboratories, where they proceeded through a full schedule of conferences and practical hands-on sessions focused on specific tasks the trainee's collection needed. Experts in the division worked with the trainee to diagnose causes of the problems affecting specimens and to apply safe techniques of preventive care. Between September 1975 and September 1978 66 individuals completed Phase II, at considerable cost to the heavy load of specimen treatment facing the

conservators. The training center stopped supporting Phase II in 1979 for its own financial reasons.[45]

Even the lucky staff members of park museums who had completed Phase I and II needed to refer to written instructions and guidelines as they tackled the care of their collections. Ned Burns' *Field Manual for Museums* served this purpose well in its time, but it had been out of print for a generation and many of its guidelines no longer applied. The Museum Branch followed by the Branch of Museum Operations had prepared in the 1950s and 1960s a mimeographed *Museum Handbook* designed to give specific guidance needed in the parks, but subsequent action by top management largely vitiated the entire Service handbook program. While Allen worked steadily to reestablish the status and promote the use of the *Museum Handbook*, he also reanimated the old dream of issuing a new edition of the Burns manual. He won full cooperation from the Division of Professional Publications in the Washington Office and managed to find the funding required. Ralph Lewis accepted the writing assignment. With its text based on the handbook but broadened as necessary to address needs of small museums generally, Lewis's *Manual for Museums* was published by the Government Printing Office in 1976.[46]

In a period when museums everywhere enlarged their concepts of collection care, technical advances in the recording, storage, and treatment of specimens accelerated as well. Allen saw that the manual would require supplementing with a flow of up-to-date guidelines on these techniques. From the outset the division received calls for help from parks asking specific advice on collection care. Some questions arose repeatedly. In discussing ways to provide this service more efficiently the division chief and his staff envisioned a series of brief, clear advisory statements that would apply to situations similar in several parks. Thinking in terms of quick response to what might often be emergencies, someone proposed calling the statements "Conserve O Grams."

By the fall of 1974 Allen asked Fonda Randell (Thomsen) of the conservation staff to develop the idea.[47] Her assignment, which included only such funding as could be squeezed from existing programs, called for improvisation. At a nearby printing and binding company she obtained a stock of bright yellow, heavy-weight offset paper. The company punched it for three-ring binders and printed the series name in color on each sheet. She and her colleagues meanwhile wrote the first five or six Conserve O Grams, which ranged from a general statement on the work of conservators to details of a safe way to clean baskets. Printed by the Harpers Ferry Job Corps Center as a training exercise, the introductory set went out to the regional curators for distribution to the parks in March 1975.

The initial distribution generated two important suggestions from the field. One superintendent requested extra copies for a museum in the

community. Allen at once saw the potential value of Conserve O Grams in strengthening liaison with outside museums and encouraged free distribution at the discretion of regional curators. In the Southwest the regional chief of interpretation proposed that a numbering system would make the series easier to file and consult as it grew. The division put this recommendation into effect with the distribution of April 20, 1977. At that time a table of contents accompanied the new Conserve O Grams, listing 46 titles under 19 categories. The total had reached 36 when Betty C. Kerns of the division administrative staff, assisted by Carol Holler, took over the task. Obtaining more satisfactory production through the Interior Department printer, Kerns issued several new titles in May 1977 and 15 more plus two revisions in August 1978. The series contained 59 Conserve O Grams by March 1979. Later that year staff curator Diana Pardue took over responsibility for the program. Six more titles came out in February 1980 and five in August. By then each new Conserve O Gram went to 334 Park Service offices and by request to 168 other museums and related organizations including ones in Canada, Europe, Asia, Africa, South America, Australia, and New Zealand.

A later chapter will trace the development of centralized assistance to parks in selecting and procuring special equipment and supplies for proper care of museum collections. Robert Olsen continued this established service along with other duties until he transferred to a park early in 1976. Allen selected as his replacement a young park ranger who had graduated from the Virginia Military Institute and served in the Army Corps of Engineers. Donald R. Cumberland, Jr., applied his grasp of technical requirements to a review of existing specifications for curatorial equipment and supplies and the sources for obtaining them. As a result he found more companies willing to bid on the manufacture of specimen storage cabinets that met the Service's high standards. Increased competition and his urging led to development of a more durable gasket for sealing old and new standard cabinets.

Product development to meet Service needs did not stop there. Improvements in the quality and variety of specimen storage trays, acid-free document and print boxes, other specimen containers, and storage accessories resulted from Cumberland's efforts. He similarly increased the number, kinds, and sophistication of instruments available to the parks for monitoring environmental conditions affecting museum collections. To the extent possible he stocked the curatorial supplies parks needed. He persuaded procurement officers to get the most important equipment items on term contracts at favorable prices. These indefinite quantity contracts fluctuated in effectiveness with the adequacy of funding, which often failed to enable parks to buy as much as they needed. Nevertheless curators throughout the Service learned that a phone call to Cumberland's desk

would either bring prompt shipment or precise information on reliable sources and current costs.

Park museums lacked adequate housing for collections not on exhibit. Allen realized that this widespread situation jeopardized the integrity of the Service as custodian of significant resources. In part because of his efforts the director's policy council ordered a review of museum specimen management in the spring of 1976. Jack Pound, management assistant to the director, was unable to complete all proposed phases of the study, but he turned over to the division collection inventories submitted by each park and specimen lists from other Service offices. Allen's wife volunteered to tabulate the figures, a long and arduous task. The grand total of 9,701,959 specimens included nearly 200,000 on exhibit. The stored remainder was double the amount previously estimated.[48] The magnitude of the resource emphasized the need for decisive action in the parks.

In January 1975, in response to calls for help from the regional curator in Santa Fe, Allen sent Betsy Hunter of his staff to Hubbell Trading Post National Historic Site. Despite the work of an able park curator who had nearly finished cataloging its large, valuable collection, conditions at the site made care of the specimens exceptionally difficult. Hunter's report led the new park superintendent to ask that Allen and his staff prepare a collection management plan for Hubbell Trading Post.[49] Allen, Betsy (Hunter) Bradley, and Fonda Thomsen spent a week at the park that July. After a frustrating day listening to reasons why improvements could not be made, they rolled up their sleeves and put some of the worst practices to right. Data gathering and analysis of the problem filled the rest of the week. Back in Harpers Ferry the team compiled a 59-page report with 173 pages of appendices. The Service's first collection management plan analyzed ten aspects of the Hubbell collection and recommended action on each.

Such plans proved useful tools, and many parks asked for this new service. When the division staff could not keep up with the demand, Allen contracted with Ralph Lewis and other individuals experienced in collection management. During the next seven years available manpower and funds permitted completion of plans for 32 parks. Beginning about 1980 and extending through 1983 the name changed to collection preservation guide, apparently to avoid review and approval procedures that seemed inappropriate.[50] Then the documents reverted to their original name, partly because unanticipated association with historic structure preservation guides implied that they were limited to housekeeping functions. Although having a plan did not obligate compliance, most superintendents who received them took action to improve collection housing and care. Regional curators supported development of the plans from the start, and following resumption of the initial name regional directors began giving them formal concurrence based

on staff review. This raised their status as yardsticks by which parks' stewardship of their museum resources might be measured.

A collection management plan also reviewed the state of a park's museum records. These constituted an essential element in collection care and formed the focus of another division program. Soon after he transferred to the Branch of Museum Operations at Harpers Ferry, David Wallace drafted a justification for establishing a national catalog of all Park Service museum collections.[51] Each park had its own catalog, but he felt the Service's need to know what, where, and how significant its total holdings of the many kinds of museum objects were. At the same time he visualized the advantages of computerizing the scattered data. His proposal remained in abeyance until the 1977 fiscal year, when the Division of Museum Service's budget unexpectedly contained initial funding for a national catalog because HFC management had assigned lower priority to other division needs.

Allen and museum technician Michael P. Paskowsky decided to have all parks deposit at Harpers Ferry the original copy of the catalog record for every specimen, retaining the working copies for park use. To ensure the permanent safety of these basic museum records, Allen obtained dedicated occupancy of sufficient space in the fallout shelter next to Mather Training Center, had it enclosed, and equipped it with shelving and special fire protection. In May 1977 the director's office ordered creation of "a central repository for museum records at the Harpers Ferry Center."[52] The division then called in an anticipated two-and-a-half million catalog cards.

As conceived at that stage the National Catalog would consist of two parts. The original records for each park would remain in numerical order in their post binders, which would be shelved alphabetically by park and region in the fallout shelter. The staff would photocopy each card upon receipt and file the copies by classification rather than by park and catalog number. The file of originals would assure permanence of the records, while the classified file would make the data much more accessible.

The division hired a new employee, Norma Rishel, as clerk of the National Catalog. She began her duties in June 1977 as the 23,593 records from the National Capital Region came to the center. With the help of two volunteers, Dorothy Lewis and Dorothy Sheetz, she reviewed and copied these cards and reported items requiring correction or completion. Records from other regions followed in steady succession. Rishel completed this phase of the project late in 1978 before family demands prompted her resignation. By the time Gordon Gay left the curatorship of the National Capital Region to become curator of the National Catalog that November, more than half a million original records were safely filed in the fallout shelter.

The effort to create the classified file of photocopied records demonstrated shortcomings in the existing classification system. In 1979 Gay convened a committee of regional, park, and archeological center curators to establish a more acceptable classification scheme for the National Catalog. For collections of historical objects the Service adopted the new functional classification proposed in Robert Chenhall's *Nomenclature for Museum Cataloging: A System for Classifying Man-Made Objects*, designed with computerization in mind. Christine Schonewald-Cox provided an updated classification list for natural history collections. These essential improvements helped the National Catalog staff in a sustained effort to find a practical means of getting the catalog computerized, but rapid changes in the data processing field complicated the task.

At this stage the story of the National Catalog passed beyond the time span of the present study. Under Ann Hitchcock, appointed chief curator in 1980 and charged with establishing accountability for museum collections, the work expanded. A National Catalog Steering Committee established in 1982 further refined the classification system and recommended other changes in the museum records procedures.

The Division of Museum Services started in 1974 with a staff of about 14. Nearly all were in permanent full-time positions inherited from the superseded Branch of Museum Operations. They could at best continue the carry-over functions assigned to the new division, a situation unsatisfactory to Allen. David Warthen as registrar found his time fully committed even with a young assistant, James (Mike) Wiltshire, whom he trained to pack objects expertly. The skilled conservators, who constituted half the staff, had large backlogs of specimens in need of preservative treatment, and some objects at risk in park collections lay outside their areas of expertise. Conservators with special knowledge and equipment would have to treat these specimens under contract. One of the two staff curators, Vera Craig, had to spend most of her time on the conservation contracts. Robert Olsen, the other curator, did what he could to furnish curatorial services to the parks. Museum specialist Herbert Martin could work part time on collection storage problems with growing attention to physical security, but a significant part of his time went to help organize the local Youth Conservation Corps summer program.

Allen successfully attacked the staffing problem. By 1980 he had increased the division to thirty permanent positions, 17 of them full time. Only five of the original 14 remained: Allen, Allen Cochran, Fonda Thomsen, David Warthen, and Mike Wiltshire. Of the rest two conservators, Walter Nitkiewicz and James Smith, had died and two others, Edward Brown and Ralph Sheetz, had reached retirement age. Betty Kerns, Allen's secretary, elected early retirement. The others—Craig, Olson, Martin, and Janet Stone—had transferred to positions outside the division. With growth

in work force and programs Allen won approval to subdivide his organization into two branches and two smaller units.

A Branch of Curatorial Services tentatively set up in 1979 encompassed the collection management, Conserve O Gram, and clearinghouse programs as well as the curatorial supply and equipment services. Dale Durham headed the branch briefly but soon left to become curator for the Southeast Region. The Branch of Conservation Laboratories had 19 employees, ten of them professional conservators. A senior conservator, Fonda Thomsen, served as branch chief for a time but preferred to exercise her professional skills. Thomas G. Vaughan left the superintendency of Grant-Kohrs Ranch National Historic Site to administer the branch after that. David Warthen assisted by museum aid James K. Lance continued to operate the Office of the Registrar while Gordon Gay and Florence E. (Libby) Allen maintained the National Catalog.

Allen also found valuable workers through temporary appointments, some of which could be renewed after a lapse. He made effective use of the Service's upward mobility, equal employment opportunity, intake training, and volunteer-in-the-park programs. The work/study and community intern programs of nearby high schools, Young Adult Conservation Corps, undergraduate intern programs of area colleges, and the graduate internships of university museum studies departments produced a significant number of willing hands. Although they number too many to name, the division owed thanks for outstanding work to such future park curators as Laura Feller, Carol Kohan, and Tyra Walker; conservators' aids and understudies Letitia Allen, Dale Boyce, Thurid Clark, Anna Johnson, Charles Shepherd, Carol Snow and Janet Werner; and interns Ann Barton, Brook Bowman, Lynn Carroll, Jeffery Goldstein, Sara Hammett, Nancy Hillery, Barbara O'Connell, Richard Rattenbury, and Richard Trela.[53]

In spite of his success in rallying extra workers, Allen reached a conclusion parallel to one that had apparently led Russell Hendrickson to retire. Both seemed to decide that the Harpers Ferry Interpretive Design Center's priorities would not adequately support the balance of functions and services required to meet the critical needs of park museums as they saw them. Allen's proposed solution differed from Hendrickson's: he reasoned that museums required direct representation in the Washington Office such as had sustained them from 1935, when Carl Russell transferred there, until 1969.

This idea was nurtured in a succession of thoughtful discussions in which Allen had a hand. In May 1974 the newly organized Division of Museum Services convened a two-day conference of regional curators, the first such formal meeting of the group in ten years. After debating issues of collection management the conferees framed ten statements summarizing their recommendations. HFC management distributed the report to the

regions but without active support.[54] At this point Allen's idea had not surfaced: the recommendations included no reference to needing a museum voice in Washington.

Regional Curator Edward Kallop called together curators from parks in the North Atlantic Region in June 1976. He asked them to define the region's curatorial needs for the next five years and weigh the role of curators in the Park Service.[55] Task groups addressing these subjects produced two years later a carefully considered 17-page report backed by eight appendices containing unusually solid data. The report urged "recognition at the Washington level of the NPS curatorial presence by establishment of an office at a peer level with Interpretation and comparable offices."[56]

At a timely moment Regional Curator Edward Jahns of the Rocky Mountain Region requested a Service-wide curators' conference to offset what he felt was growing provincialism among Park Service museum workers. Allen strongly endorsed the idea, and the division carefully organized the affair.[57] More than a hundred participants met at the Mather Training Center in September 1978, having received beforehand copies of the North Atlantic report. Smithsonian Assistant Secretary for Museum Programs Paul Perrot, an internationally recognized authority on the profession, gave the keynote address. The attending curators and technicians labored with marked enthusiasm as a group and in seven committees, which refined current thinking on a number of problems and proposed solutions. The conference also endorsed some general resolutions, the second of which clearly expressed Allen's matured idea: "A Chief Curator position should be established in the Washington Office Division of Cultural Resources Management and corresponding positions should be established or realigned within each Region and at Denver Service Center."[58]

Harold Peterson's departure at the end of 1977 had vacated the title of chief curator. Allen proposed to use it for a new purpose. Where to try to locate it within the director's office was a more difficult question. Although curatorial work in the Park Service had traditionally fallen under the umbrella of interpretation, several factors suggested a change. Being part of interpretation had naturally fostered an emphasis on exhibits rather than collection care. Curators in the North Atlantic Region had in their recent report advocated independence from the interpreters. The interpretation unit in the Washington Office was then seriously understaffed. Coincidentally, creation of an assistant directorship for cultural resources under F. Ross Holland, Jr., in July 1978 reflected increased concern for cultural resource management. Although park museums and collections dealt with natural history as much as human history, the cultural resources office with its responsibilities for historical and archeological artifacts seemed the better

choice. Events justified it even before the conference resolutions could receive formal submission.

The House of Representatives Committee on Interior and Insular Affairs had staff members scrutinizing the Service's performance in cultural resource management late in 1978. Director William J. Whalen called a meeting on the subject at Mather Training Center in January 1979. House committee staff members attended, as did about fifty Service officials. The conference report submitted numerous recommendations for action by the director. One of them, starred as especially important, was to establish the chief curator's position in the Washington Office under cultural resources. In March the director announced his approval and listed ten actions the chief curator needed to take.[59]

To fill the position the Service sought applicants from the museum community at large. The choice fell on Ann Hitchcock, a highly qualified candidate, who began her duties early in June 1980.[60] Her development of staff and programs, which focused first on achieving high standards of collection care and management throughout the Service, lies largely beyond the time frame of this study. Even before her appointment, Allen promoted a reorganization that would give the chief curator staff support. With his encouragement, the assistant director for cultural resources recommended "that the Division of Museum Services and its conservation laboratory . . . be reassigned to [the Washington Office] and placed under the proposed Chief Curator of the National Park Service."[61] The directorate approved this action to take effect in mid-1981.

On the verge of execution, HFC management protested. It argued that the work the division performed did not constitute a proper function of the central policy and oversight office in Washington. It claimed that loss of the conservation laboratories would cripple HFC's exhibit production program, and it noted that an employee union being organized at Harpers Ferry had not been consulted. The chief of the Office of Park Planning and Environmental Quality, who held Washington Office responsibility for the center's mission, withdrew his consent to the transfer. The resulting impasse led to a management study.

Before the study began, the chief curator conferred with HFC's manager. They agreed that the chief curator had to ensure specimen conservation for museum collections Service-wide but that the center should control the timely treatment of specimens in its exhibit production and rehabilitation programs. This seemed to imply splitting the staff and facilities of the Branch of Conservation Laboratories. At that point center management averred that 85 percent of the conservation laboratories' work was on exhibit specimens while Division of Museum Services records indicated 45 percent with only 21 percent funded by exhibit projects.[62] The management study team approached the problem largely through

analysis of time and cost. Its report, submitted in February 1982, recommended leaving the Branch of Conservation Laboratories essentially intact as part of HFC. By implication at least the conservators would work on specimens in exhibits produced or rehabilitated by the center.[63] The report left to the chief curator the larger problem of conserving museum specimens throughout the parks. Despite challenges to the report's accuracy the director approved it. A second report in April, although sharply criticized, led to implementation of the recommendations.[64] In August the curatorial staff and programs of the former Division of Museum Services became part of the Curatorial Services Division, Washington Office.[65]

NOTES

1. Division of Interpretation and Visitor Services staff meeting minutes, Apr. 25, 1967, Interpretive Conferences folder, Storage Box 111, NPS History Collection. Although officially adopted, both new designs proved short-lived.

2. David D. McLean, an accomplished young designer, joined the exhibit planning staff in 1965, Walton D. Stowell transferred from the architectural unit of the Eastern Service Center in 1969, and Sois Ingram added his design talents to the in-house group at the end of 1970. Contract designers included the Teague group on the American Museum of Immigration, Kissiloff and Wimmershoff on visitor center exhibits at Morristown and Minute Man national historical parks, Imaginetics, Inc., on the Grand Teton Indian Arts Museum, Aram Mardirosian's Potomac Group on the Museum of Westward Expansion, and Barry Howard Associates on several projects.

3. William M. Blair, "At Ford's Theater, Tour Is the Thing," *New York Times*, Mar. 10, 1968, p. 62.

4. On November 6, 1964, Everhart wrote the Western Museum Laboratory's acting chief: "I must . . . admit that I am personally critical of our museum philosophy. I do not think it is inevitable that every Park Service area must have a visitor center with a museum containing panel and case exhibits. I am personally assured by the Director that this is his belief . . . ." (Exhibits and Museum Philosophy folder, Branch of Museums Dailies 1959-1962 storage box, NPS History Collection.) The 1965 goals of the Division of Interpretation and Visitor Services stated: "The enhancement of museum design is a major objective . . . . Avoid museum design that tells a narrative story by sequential panel and case exhibits . . . ." (Reports—Status of Programs, Projects, Goals folder, Branch of Museums General Files storage box, ibid.)

5. For example, the chief of exhibit planning and design explained in a September 8, 1975, memorandum: "New exhibits at Yavapai will avoid a complete or sequential treatment of canyon geology. They will aim rather at creating a moderate number of specific geological impressions or vignettes. . . . Each exhibit will stand on its own." Regarding a historic site museum, he wrote on April 19, 1977, "The exhibit cannot *tell* a story as suggested, it can only create some *impressions*." (1975 and 1977 binders, Division of Museums Dailies storage box, NPS History Collection.)

6. Reactions to the new installation ranged from approbation to "a dismal failure." As Ned Burns had warned, such technically complex exhibits tended to overtax local maintenance and repair facilities.

7. Memorandum, Manager, Harpers Ferry Center, to Regional Director, Southeast Region, Sept. 12, 1978, 1978 binder, Division of Museums Dailies storage box, NPS History Collection.

8. Memorandum, Chief, Division of Exhibits, to Branch of Exhibit Planning and Design, May 19, 1978, ibid.; memorandum, Chief, Division of Exhibits, to Regional Director, Midwest Region, May 23, 1978, ibid.

9. Memorandum, Ellsworth Swift to Director, Harpers Ferry Center, Mar. 19, 1970, 1970 binder, ibid.

10. Memorandum of Dec. 18, 1964, Museum and Exhibit Activities (General) folder, Branch of Museums Dailies storage box, NPS History Collection.

11. Memorandum, Acting Chief, Branch of Museum Development, to Chief, Division of Interpretation and Visitor Services, Feb. 15, 1966, Reports–Status of Programs, Projects, Goals folder, Branch of Museums General Files storage box, NPS History Collection.

12. Memorandum of Dec. 12, 1966, Museum and Exhibit Activities (General) folder, Branch of Museums Dailies storage box, NPS History Collection.

13. Memorandum, Chief, Branch of Museum Operations, to Acting Chief, Branch of Museum Development, Aug. 14, 1964, Branch of Museums/Museum Operations Dailies August 1962–December 1965 storage box, NPS History Collection.

14. Report, Conference of Regional Museum Curators, Sept. 13-18, 1964, pp. 9-11, Museum History 1960-70 box, NPS History Collection.

15. When chief of the eastern laboratory, Frank Phillips programmed "circuit rider" trips by selected preparators to accomplish as much on-site exhibit maintenance as possible. David H. Wallace contributed particularly to making the old exhibit plan file effective after he became assistant chief of the Branch of Museum Operations in September 1968.

16. Historic furnishings curator Nan V. Carson (Rickey) pioneered the park museum maintenance manual concept when she prepared interpretive maintenance guides for Old Bedlam at Fort Laramie National Historic Site in 1965. When the Branch of Museum Operations discovered in 1969 that case builders in the laboratory could not describe how to open a new exhibit case at the Manassas visitor center containing artifacts needing periodic treatment, it began to supply specific exhibit maintenance manuals for new installations.

17. Hubbard had transferred from the position of supervisory park naturalist at Yosemite in 1966 to become deputy chief of the Division of Interpretation and Visitor Services as well as chief of the Visitor Services Branch. At Yosemite, demonstrating a productive enthusiasm that fit Everhart's and Hartzog's management style, he had led in creating an open air museum of historic structures moved from other areas of the park and reerected at Wawona. This Yosemite Pioneer History Center rapidly became a fresh point of interest supporting the park objective of relieving

overcrowding in the valley. It also illustrated the tendency of such directed developments to shortcut the scholarly research and planning essential to authentic preservation and interpretation.

18. Western Museum Laboratory monthly reports for May, September, October 1967, Harpers Ferry Center Division of Museums Dailies binders, NPS History Collection; memorandum, Chief, Western Museum Laboratory, to Chief, Branch of Museum Operations, Sept. 26, 1967, ibid. In October 1967 the laboratory received an important collection of ethnological specimens for the newly authorized Nez Perce National Historical Park.

19. Memorandum to Clair Younkin, Feb. 13, 1968, ibid.

20. Segeren's skill as a carver so pleased the museum development managers that they included carvings in enough park museums to keep him employed long after retirement age. Martin inventoried property, made record photographs of museum specimens, cleaned and repaired country antique furniture, and designed and built special specimen storage equipment.

21. Wallace's preparation for such tasks included graduate study at the University of Edinburgh, a doctorate from Columbia, curatorial experience at the New-York Historical Society, and co-editorship of a standard dictionary of American artists.

22. Issue paper, "The Museum of the National Park Service," Planning—Issue Paper 1970 folder, Old WML Files storage box, NPS History Collection.

23. Memorandum, Director, NPS, to Assistant Secretary, Administration, Oct. 20, 1969, Organization, Park Service, 1968–69 folder, Reorganization 1968– box, NPS History Collection. The memorandum received departmental approval October 22.

24. Although Everhart was no longer an assistant director, Director Hartzog made it clear that he remained a member of his central staff. As HFC director Everhart also received supervisory control of the Mather Training Center next door and Harpers Ferry National Historical Park. Both centers occupied park land and the park provided them maintenance and protection services. It was expected also that the park would afford a testing ground and showcase for some of HFC's creative products. This combination was short-lived: MTC passed to the control of a new Training Division in the Washington Office in 1971, and the park was placed under National Capital Parks in 1974.

25. The list of divisions in the memorandum did not include Planning and Interpretive Services, most of whose staff had moved to Harpers Ferry in August. Perhaps the omission forecast the transfer of the interpretive planners on paper to the Eastern Service Center, then located in Washington. Physically and to a large extent functionally, however, the planning staff became and remained part of HFC.

26. During this period, for example, Christiansted National Historic Site sent in a collection of old Danish uniforms and accouterments. The curator had to identify and sort out the parts, have them cleaned and treated by conservators, catalog them in detail, and provide interim safe storage. About the same time Jewel Cave National Monument shipped examples of large and extremely fragile cave formations that required special handling and storage.

27. The Branch of Museums had developed a Service-wide clearinghouse procedure for the transfer and exchange of specimens. Although it had discouraged central repositories for objects of possible future use in park museums or surplus to their needs, the laboratory expanded its space at Springfield to accommodate a historic surfboat that Cape Hatteras National Seashore had acquired but could not store. Yellowstone asked a similar favor for furnishings the Army had used at Fort Yellowstone, and several parks sent cannon tubes for warehousing.

28. Among the latter the branch installed exhibits characteristic of the new design concepts at the Chesapeake and Ohio Canal's Great Falls Tavern. The 1970 Curatorial Methods class visited the new installation soon after and to the surprise of the instructors reacted quite critically. (Memorandum, Ralph H. Lewis to Russell Hendrickson, Dec. 28, 1970, HFC Division of Museums Dailies binder, NPS History Collection.)

29. Cadwallader continued in charge of museum exhibit production throughout the remainder of the period reported in this study. Phillips transferred to the Jefferson National Expansion Memorial in July 1974 to oversee the Museum of Westward Expansion exhibit contract, then retired. Jean Cooper succeeded him in 1974 as museum contracts manager.

30. Memorandum, Assistant Chief, Branch of Museum Operations, to Director, HFC, Apr. 10, 1972, HFC Division of Museums Dailies binder, NPS History Collection. By the end of the decade the building contained nine well equipped laboratories or work rooms for conservators, three secure specimen storage rooms, curatorial and managerial offices, a well organized special library, and photographic facilities including x-ray.

31. Memorandum, Deputy Director, HFC, to Division Chiefs, Sept. 8, 1970, ibid.

32. Memorandum, Chief, Branch of Museum Operations, to Acting Director, HFC, July 28, 1972, ibid.; memorandum, Chief, Branch of Museum Operations to Director, HFC, Apr. 18, 1973, ibid.

33. After three years, following another change in the Service directorship, HFC and the Denver Service Center came under line control of an assistant director responsible for planning and development. Everhart became an assistant to the director, and interpretation no longer had its own assistant director.

34. Memorandum to Deputy Manager, HFC, Oct. 31, 1975, HFC Division of Exhibits Dailies binder, NPS History Collection.

35. Special Directive 78-1, Feb. 6, 1978. See NPS-28, *Cultural Resources Management Guideline*, December 1981, Appendix N.

36. Memorandums, Hendrickson to Manager, HFC, June 30, 1976, and May 18, 1978, and briefing notes, Mar. 30, 1977, HFC Division of Exhibits Dailies binders, NPS History Collection.

37. See, for example, memorandums and briefing notes, Hendrickson to Manager, HFC, June 25, 30, July 22, 1976, Mar. 30, Aug. 12, 1977, Mar. 10. Apr. 10, 1978, July 25, 1979, Jan. 17, 1980, ibid.

38. HFC functioned for the most part as a development unit intent on planning and producing new exhibits, publications, and audiovisual programs. Vital preservation responsibilities seemed destined to secondary consideration under its aegis, especially as Bicentennial projects loaded the center with work and lent further stimulus to production. Field areas could observe where the emphasis lay when they received unasked-for Bicentennial material but could not obtain requested curatorial help. This fostered their perception of museum specimens as interpretive tools rather than basic park resources. Lean years would later provoke a crisis over center priorities.

39. In a July 23, 1981, memorandum to HFC's manager Allen stated: "Most of the materials with which we started the Clearinghouse came out of the mess from Springfield. . . . We picked up approximately 5,000 items that were accumulated virtually without benefit of paperwork or ownership records. While at Springfield the material was horribly stored. . . . All trades and transfers can [now] be ethically, legally, and documentarily accounted for. Believe me, that could not be said for the 'deals' that were made while the Clearinghouse was working out of Springfield." (Clearinghouse file, Curatorial Services Division files, Harpers Ferry.)

40. Occupation of the fallout shelter adjacent to the Mather Training Center involved many details illuminating less constructive aspects of the bureaucracy. Dedicated for high departmental use in case of nuclear attack, this inviting space lay largely idle. Allen persuaded the Office of the Secretary to release the shelter to the Park Service on condition that access would be limited to the critical collection storage operation and that the shelter would be maintained ready for quick reversion to its basic emergency function. HFC and the Mather Training Center nevertheless shared occupancy, and Museum Services obtained use of perhaps a third of the shelter, barely enough to house the National Catalog of park museum collections and a limited clearinghouse operation. Demands of the various operations that moved into the shelter led to breaching its protective wall for practical access. (Correspondence, 1975-84, in Bomb Shelter Space file, Curatorial Services Division files, Harpers Ferry.)

41. Durham served as clearinghouse curator 1978–80. In 1980 Allen combined three divisional programs into a Branch of Curatorial Services with Durham as chief. In this capacity he continued to oversee the clearinghouse with Elizabeth A. Holmes, a student assistant, doing the hands-on work. Durham became regional curator of the Southeast Region in 1981.

42. Memorandum, Attorney-Advisor, Parks and Recreation, to Staff Curator, NPS Clearinghouse, Dec. 3, 1980, Clearinghouse file, Curatorial Services Division files, Harpers Ferry.

43. Memorandum, Chief, Division of Museum Services, to Regional Director, National Capital Region, Dec. 14, 1981, Harpers Ferry NHP file, ibid. Allen patterned this action on a similar helpful intervention for Antietam National Battlefield.

44. For background on this course see Kallop's significant "Progress Report on Museum Technician Training," 1980, Training-General-Misc. file, ibid.

45. An additional cause of Phase II's termination lay in the conservators' professional concern about the proper role of technicians and curators in object treatment, a matter still unresolved within the profession. Reference Services curators involved in the scholarly role of their profession sponsored a Phase III course. Mather Training Center funded one session in 1980 at the Henry Francis du Pont Winterthur Museum.

46. The book found a substantial audience. After a second printing was exhausted, GPO sold the plates to a commercial printer, who reissued it with a different title and slightly changed format.

47. Personal interview with Fonda Thomsen, Jan. 13, 1986. An information sheet on care of historic furniture prepared by conservator Ralph Sheetz for the curator at Lyndon B. Johnson National Historical Park in 1973 may have foreshadowed the Conserve O Gram idea (memorandum, Allen to Regional Director, Southwest Region, Feb. 23, 1973, HFC Division of Museums Dailies binder, NPS History Collection).

48. Memorandum, Acting Deputy Director to Directorate, Mar. 31, 1976, Artifact Management Survey (Jack Pound Report) file, Curatorial Services Division files, Harpers Ferry; memorandum, Allen to Pound, May 25, 1977, ibid.

49. Memorandum, Superintendent, Hubbell Trading Post, to Regional Director, Southwest Region, May 8, 1975, Hubbell Trading Post NHS file, Curatorial Services Division files, Harpers Ferry. Hunter's visit resulted from a casual visit Superintendent Thomas Vaughan had made to the Division of Museum Services during a Mather Training Center course in late 1974. A tour Allen gave Vaughan through the laboratories opened his eyes to the critical need of collections for proper care. As recipient of the first collection management plan, Vaughan appreciated its promptness and thoroughness and its innovative recommendation to shift curatorial care from a secondary responsibility of busy interpreters to the primary concern of a curator reporting directly to the superintendent.

50. Allen regarded the documents as "our 'best shot' of staff advice to park management on how to take care of their collection. They do not have to follow this advice, but it's there if they want it." Most HFC plans, on the other hand, required extensive multilevel review and top management approval. Memorandum, Allen to Manager, HFC, June 12, 1980, Collection Preservation Guides folder, Curatorial Services Division files, Harpers Ferry.

51. Memorandum to Chief, Branch of Museum Operations, Feb. 12, 1969, Harpers Ferry Museum Support Facility Daily File binder, HFC Division of Museums Dailies storage box, NPS History Collection.

52. Staff Directive 77-5, Acting Deputy Director to Field Directorate and All Park Superintendents, May 13, 1977, National Catalog 1952-82 folder, Curatorial Services Division files, Harpers Ferry.

53. The division had a particularly fruitful association with the museum studies program at Texas Tech University, which sent a succession of able interns to Harpers Ferry. Interns also came from the Cooperstown program and Antioch, Hood, and Shepherd colleges.

54. Memorandum, Chief, Division of Museum Services, to Manager, HFC, July 15, 1974, Regional Curators' Conference 1978 folder, Curatorial Services Division files, Harpers Ferry; memorandum, Manager, HFC, to All Regional Directors, Aug. 5, 1974, ibid.

55. Parks in the Northeast had recruited curators well trained in graduate museum studies programs who had been taught to regard the scholarly study of objects as the prime function of their profession. The nature and state of museum collections in the parks at the time required them to devote most of their effort to more mundane aspects of collection care. The latter charge doubtless reflected their concern and frustration.

56. "Evaluation of the North Atlantic Region's Curatorial Activity and Personnel Needs," June 1978, p. 15, accompanying memorandum, Chief, Division of Museum Services, to All Curators' Conference Participants, Aug. 31, 1978, Regional Curators' Conference 1978 folder, Curatorial Services Division files, Harpers Ferry.

57. Memorandum, Jahns to Allen, Jan. 12, 1978, ibid.; memorandum, Allen to All Regional Curators, Mar. 7, 1978, ibid.

58. Conference Committee Reports, ibid.

59. Memorandum, Director to Regional Directors and Managers, DSC and HFC, Mar. 12, 1979, Cultural Resources Conference 1979 folder, Curatorial Services Division files, Harpers Ferry.

60. Hitchcock graduated with distinction from Stanford with major work in anthropology and art history, completed a master's degre in anthropology with a specialization in museum studies at the University of Arizona, gained solid collections management experience at the Museum of Northern Arizona, developed and taught a course in museum studies at Northern Arizona University, and became assistant chief curator in the progressive Manitoba Museum of Man and Nature and assistant professor of museology in the University of Winnipeg. She received training in the conservation of archeological and ethnographic objects at the Smithsonian's National Museum of Natural History, the Institute of Archaeology in London, and the British Museum's Museum of Mankind.

61. Memorandum, Acting Assistant Director, Cultural Resources, to Associate Director, Management and Operations, Mar. 28, 1979, Reorganization (1981) folder, Curatorial Services Division files, Washington Office.

62. Memorandum, Chief Curator and Manager, HFC, to Deputy Director, Sept. 11, 1981, ibid.; memorandum, Assistant Director, Cultural Resources, to Deputy Director, Oct. 7, 1981, ibid.

63. Memorandum, Chief, Management Consulting Division, to Director, Feb. 1, 1982, ibid.

64. Memorandum, Chief, Management Consulting Division, to Director, Apr. 29, 1982, ibid.; memorandum, Assistant Director, Cultural Resources Management, to Deputy Director, June 17, 1982, ibid. The reports and responses suggest that the management experts reached conclusions without comprehending what purposes museums and their collections serve or what their needs encompass. The decision to leave the conservation staff and facilities as an adjunct of an exhibit design and production unit left the professional standards that bind conservators to "unswerving respect for the integrity of historic and artistic works" vulnerable when in conflict with exhibit proposals.

65. A 1983 reorganization in Washington placed Curatorial Services as a branch in the Preservation Assistance Division of Cultural Resources until 1987, when it again became a separate division. Allen as deputy chief curator and his staff remained at Harpers Ferry, moving from the old Shipley School to the upper floors of the park's visitor center. Thomas Vaughan left his position as chief of the conservation laboratories to work especially on policy development and curatorial training. Allen accepted the assistant superintendency of the Blue Ridge Parkway in June 1983, and Vaughan became superintendent of Chaco Culture National Historical Park in February 1985.

FURNISHED HISTORIC STRUCTURE MUSEUMS

Furnished historic structures compose a distinct category of museums worthy of separate examination. According to the National Park Service's *Manual for Museums*:

> The peculiar requirements of furnished historic structure museums stem largely from two factors, one theoretical and the second purely practical. This kind of museum undertakes to recreate the environment of some historic person, event or period. An environment is a complex whole. Emphasis upon it rather than on individual specimens and simpler concepts affects development, operation and use at every turn. On the practical side the buildings these museums occupy were originally designed for other purposes . . . . Any museum that takes over a building secondhand has serious problems in adapting the space. When the structure is itself a specimen, the historic partitions, doors, stairways, windows, and other elements must remain or be restored as part of the setting. The preservation and display of objects and the handling of streams of visitors . . . under these relatively inflexible conditions demands adjustments that are seldom easy.[1]

Furnished historic structure museums figure importantly in the history of historic preservation in the United States. After New York State saved George Washington's headquarters in Newburgh as a patriotic shrine in 1850, the conversion of revered old buildings to museums became for a century the normal way to preserve them from destruction or decay. Only later did preservationists move to rescue far more, if often less significant, structures by adapting them to new residential and commercial occupancies.[2]

Scant theorizing accompanied the early development of historic house museums. The incentive to save old buildings for public benefit generally arose from their association with famous persons or events. Less often structures were cherished because they recalled some period of national or regional importance, such as aspects of colonial or frontier experience. Perhaps still fewer buildings won redemption primarily on aesthetic merit; architectural exemplars lacking other historical associations seldom appeared to fulfill the commemorative intent. Making the structure a repository for objects related to its theme seemed to increase its interest and effectiveness.

The Jacob Ford House in Morristown, New Jersey, illustrates the historic process. The house served as Washington's headquarters during the bitter winter of 1779–80. In later years members of the Ford family kept one room furnished as they believed Washington occupied it. When the estate went on sale in 1873, four public-spirited citizens purchased the house with the room of historic furnishings and organized the Washington Association of New Jersey to preserve and administer it. New Jersey granted the association a charter that offered a state subsidy for "so long

as the building known as the Washington Headquarters shall be . . . held as an historic building, within which all the people of New Jersey may deposit articles of interest connected with the men and events of our Revolutionary struggle . . . ."[3] Association bylaws called for the collection and preservation of papers, documents, relics and objects of interest related to the Revolutionary War. As noted in Chapter One, the association operated the house as a museum for sixty years until it became part of Morristown National Historical Park.

Exhibiting a combination of furnished rooms and miscellaneous displays, the Ford House functioned as a museum in the opinion of the association and the public. In later years the association employed a curator to look after the collection, which had broken through the commendably strict limits of its initial scope to include post-Revolutionary and non-military items. In all these respects the house fairly represented the museums that had developed from New York's prototype at Newburgh. Characteristically small and specialized, often isolated and with minimal staffing, they had little contact with the mainstream of museum thought. Laurence Vail Coleman of the American Association of Museums gave them barely a paragraph in his 1927 *Manual for Small Museums*.

Soon after, however, Coleman observed a rapid increase in the number of house museums and undertook a study of their nature and needs. He concluded that the automobile accounted largely for their proliferation: cars gave many more people the mobility to visit them, and they provided attractive destinations for motor trips. In *Historic House Museums* Coleman gave these institutions a name, a broad definition, and guidelines based on sound museum practice. His book appeared just as the Park Service began to grapple seriously with museums of this sort. Coleman noted this and issued a challenge: "National ownership is a new development and one which promises much at the hands of the National Park Service . . . . Clearly the opportunity lies in acquiring houses of primary significance representing the high points of the whole of American history."[4]

Historic House Museums in the National Parks to 1941

With his challenging statement Coleman listed eleven historic house museums for which the Park Service already had responsibility. Seven of these were newly acquired from other federal agencies in the 1933 government reorganization. The other four, plus one that Coleman's informants had evidently overlooked, provide the baseline of Service involvement with museums of this kind. Their park staffs had previously had no recognized museological guidance.

Tumacacori Mission introduced the Service to their peculiar problems, although it would be interpreted primarily in a separate site museum rather

than made a museum itself. It had been under Interior Department care since the establishment in 1908 of Tumacacori National Monument, which became one of the places originally assigned to the Park Service in 1916. The mission ruin was a gem deserving the Service's best architectural preservation and museum conservation efforts. By 1921 Frank Pinkley, the resourceful custodian of Casa Grande National Monument, managed to get a new roof on the ruin using native materials and traditional methods. Later he enlisted professional help from Service field headquarters in San Francisco and Berkeley: architects Charles Peterson and Kenneth McCarter inspected the mission in January 1930. Peterson's report expressing alarm at its condition apparently helped win an exceptional line-item appropriation for repairs. Pinkley also got Carl Russell, the museum expert from the Service's educational headquarters, to visit Tumacacori in April 1933. In considering the proposed site museum, Russell could not have failed to appreciate the vital role historical research needed to play in developing historic structure museums.[5]

The Service took on another historic house museum in 1923, still unrecognized as a museological project. Pipe Spring National Monument included a fortified dwelling erected by Mormon pioneers in 1870–72. A member of the last ranching family at Pipe Spring became its custodian and continued in that capacity for years, collecting furnishings, equipment, and other artifacts from other families of Mormon settlers in the vicinity. What he gathered he exhibited, doubtless with scant benefit of curatorial or interpretive refinement.[6] The resulting house museum typified the many that led Coleman to set new guidelines. Pipe Spring received some curatorial advice and help after it became part of Pinkley's Southwestern National Monuments group, and in the late 1930s a CCC camp provided the labor for stabilization of the structure. Professional help in the care and display of the collection would come much later.

In contrast to Pipe Spring's isolation the other baseline cases lay uncomfortably close at hand. Congress in January 1930 established George Washington Birthplace National Monument, located within easy driving distance from Washington. The Park Service became responsible for completing and managing a project undertaken by the Wakefield National Memorial Association. Its centerpiece was a historic house museum. The house, unfortunately, was a conjectural reconstruction based on inadequate research. Like Tumacacori, this situation underlined the Service's need for professional historians, historical architects, and historical archeologists. It taught the Service less about furnishing historic structures. Ladies of the association long retained control of acquiring and arranging the contents of the house, largely at their own expense. The park custodian naturally responded to their requests and suggestions concerning aspects of the furnishings rather than consulting Service curators.[7]

Before the end of 1930 establishment of Colonial National Monument brought early prospect of two more house museums. Coleman listed one, the Lightfoot House, that proved of only passing concern as a museum. After Service architects restored this 18th-century house in Yorktown, it afforded temporary space for interpretive exhibits and public contacts until reconstruction of the larger Swan Tavern and its outbuildings provided more adequate quarters nearby. Some chairs, benches, and other occasional pieces reproduced from 18th-century examples helped create the desired atmosphere for park visitors seeking information.

The Moore House at the edge of Yorktown, on the other hand, became a bona fide historic house museum. This modest plantation home fitted Coleman's concept of having primary significance related to a high point of American history. In its parlor representatives from the opposing armies had drafted the surrender terms ending the siege of Yorktown. The structure still stood in 1930, although altered and decrepit. With generous help from John D. Rockefeller, Jr., and Colonial Williamsburg the new park patched up the house enough to display it during the sesquicentennial celebration of the victory. Then the Service undertook its definitive restoration. The eminent architectural firm of Perry, Shaw and Hepburn, deeply involved in the Colonial Williamsburg project, volunteered to carry out the work beginning late in 1932.

Charles Peterson, newly transferred to Service headquarters, engaged in an intensive study of the structure. He located numerous old views of the building in public and private collections as well as pertinent written documents. As the removal of interior plaster laid bare the framing, he continued structural studies. Careful analysis of the documentary and physical evidence resulted in a restoration of high standard. Feeling a moral obligation to preserve essential information to guide future students of the building and architects responsible for its maintenance, Peterson completed his involvement by compiling a detailed report presenting the data upon which the architects based their decisions and describing and illustrating the work performed. This document became recognized as the prototype of Park Service historic structure reports.[8] The park now had a finely restored but essentially empty house.

The Moore House under restoration, the neighboring Lightfoot House, the problematical reconstruction at George Washington's birthplace, the remote Pipe Spring fort, and Tumacacori Mission embodied what little the Service knew about historic house museum problems and techniques in 1933 when Coleman's professional guidelines became available. No evidence suggests a quick adoption of Coleman's advice. Instead work continued through the 1930s on the basis of expedient decisions made in response to particular situations by the directorate or more often the field.

Perhaps the decade saw some greater caution in decision-making as experience accumulated.

The refurnishing of the Moore House illustrates the trial-and-error procedures of the period. The park surely wished to furnish it to a standard that would bear comparison with Colonial Williamsburg, its neighbor. To do so would require both money and expert knowledge of antiques. For the latter it called on Alfred Hopkins, who joined the park staff in the mid-1930s as a curator. The park had only a Windsor chair and parts of a clock from the original furnishings. Hopkins searched the wills of Augustine Moore, his wife, and her parents finding few items of furniture mentioned. The estate inventories of Mrs. Moore's parents contained more, if secondary, information. With this evidence he used his familiarity with antiques to compile a room-by-room list of likely furnishings. Then he consulted standard books, principally Wallace Nutting's *Furniture Treasury* and Thomas Ormsbee's *The Story of American Furniture*, choosing examples that he considered appropriate to the Moore House. Period, regional style, his conception of the Moores' tastes, and the sizes and proportions of the rooms influenced his choices. His bulky report, completed in April 1936, combined floor plans, furnishing lists, and photocopies of illustrations for each piece.[9]

Buying suitable antiques was costly, and finding the right pieces might take years of searching and dickering. The items would come one-by-one from many antique dealers and private collectors unaccustomed to federal billing and payment methods. These processes fitted poorly into normal appropriation and purchasing procedures. Perhaps foreseeing the difficulty, the park in this instance hoped to use non-government funds. The Yorktown Sesquicentennial Association had raised money for the 1931 commemoration and had vested some of it in a Committee for the Restoration of the Moore House. The park superintendent was treasurer of the fund, in which a balance remained.[10]

In April 1936 the Daughters of the American Revolution voted to sponsor the Moore House as a patriotic shrine and furnish the Surrender Room. Although this action doubtless followed discussions between the park and DAR officials, the two parties viewed the collaboration differently. The park assumed that the DAR would raise about $5,000 from its chapters and asked that the money be deposited in the Moore House fund. The DAR on the other hand expected the chapters to donate furnishings found and purchased by interested members. In the spring of 1937 the Park Service director acquiesced in the DAR's selection of the furnishings subject to Hopkins' approval of the pieces chosen. To guide the ladies the park supplied a list of the desired furniture accompanied by pictures from Hopkins' report.[11]

DAR officers and local dignitaries dedicated the furnished room in April 1938. About three months later Hopkins submitted an inventory. The ladies had provided a number of items not on his suggested list, and several of the pieces proved strikingly more elaborate than he had intended. DAR members had acquired and shipped most of the furnishings to the park without consulting him on their selection. He had rejected only four items as unsuitable. Unquestionably the room looked more richly stylish than he thought it should, but he expressed pleasure in the result. In keeping with the times he, like the ladies, viewed the room as a display of fine furnishings to be enjoyed as such. Any evocation of the tense atmosphere pervading the room at its moment of historical significance received scant consideration.[12]

The Daughters of the Cincinnati voted in December 1937 to refurnish the Moore House dining room. Hopkins suggested contributions of a dining table, four chairs, a serving table, a corner cupboard, a mirror, and a portrait. The Children of the American Revolution provided furnishings for a third room. The park acknowledged the help of each organization by mounting bronze tablets at the doors of the rooms. This well-meaning gesture violated one of Coleman's clearest guidelines—that warning against the intrusive effect of labels in a carefully recreated historical environment. Even more objectionable than identification or explanatory labels were those crediting donors or lenders, which Coleman called "monuments to human frailty."[13]

In 1933 the Service acquired seven properties classified by Coleman as historic house museums. Two came from the former Office of Public Buildings and Public Parks of the National Capital. One of these, the Joaquin Miller Cabin in Rock Creek Park, was not developed as a museum, but the other clearly fit the category.

In 1896 Congress had directed the purchase of the house across from Ford's Theatre where Abraham Lincoln died. Osborn H. Oldroyd lived there rent-free and displayed his extensive and eclectic collection of Lincoln memorabilia. The association of the house with Lincoln and its central location served the museum well, but the difficulty of fitting the objects and visitors in the cramped domestic rooms exemplified Coleman's warning against ordinary museums in historic buildings erected for other purposes. In 1926 Congress bought Oldroyd's collection, and in 1932 the Public Buildings and Public Parks office moved it across the street to the main floor of the Ford's Theatre building, renovated as the Lincoln Museum. Five women's patriotic societies then helped furnish three rooms on the principal floor of the House Where Lincoln Died, as it became officially known. Aiming to make the rooms appear as they had on the night of the assassination, the refurnishers relied in part on a floor plan sketched by one of the upstairs tenants soon after the event.[14] The Service

probably made few changes in the furnishings until the intensive restudy that accompanied the Ford's Theatre restoration in the 1960s.[15]

Another recently refurnished home across the Potomac from Washington became a Park Service historic house museum in 1933. In 1925 Congress had authorized the War Department to restore the deteriorating Arlington House in Arlington National Cemetery. The act further instructed the secretary of war "to procure, if possible, articles of furniture and equipment which were then in the mansion and in use by the occupants thereof" and "in his discretion, to procure replicas of the furniture and other articles in use in the mansion during the period mentioned, with a view to restoring, as far as may be practicable, the appearance of the interior of the mansion to the condition of its occupancy by the Lee family."[16] The Quartermaster Corps began work on the project in 1929. Private individuals and patriotic societies gave and lent furnishings to supplement what the War Department purchased. Arlington House began attracting visitors as soon as the project started and drew thousands of admirers once restored and refurnished.

Although Congress had specified restoring it to its 1860 condition, the refurnishing failed to support this objective. Donors, dealers, and those who made the final choices wanted the house to have fine pieces, worthy of a museum and of the commemorative intent. The period styles they chose tended to be ones currently favored. Consequently the rooms on display looked more like what George Washington Parke Custis might have wished for, could he have afforded it, when he started building Arlington in the early 1800s.[17] When the Park Service came to realize the discrepancies between the 1860 appearance and the idealized restoration, the popularity of the house as visitors knew it would make revision doubly difficult.

The 1933 government reorganization transferred three additional structures from the War Department that Coleman listed as historic house museums. Two of these were masonry coastal fortifications that the Army had done little to develop as historical exhibits. Refurnishing their many rooms would be expensive, create repetitious displays, and offer little aesthetic attraction. The Park Service local staff seems to have proceeded with restraint when it took over Castillo de San Marcos (then called Fort Marion) in St. Augustine, Florida. It developed effective signs and markers to interpret the various features and interior spaces. Objects were later placed on exhibit in two or three of the casemates to help fill in the historical background.

At Fort McHenry in Baltimore, circumstances tempted further development. Within this fort four freestanding buildings flanked the parade ground, dominating the view of visitors entering through the sally port. Two floors of empty rooms in each of these garrison quarters constituted a vacuum interpreters found hard to tolerate. When the Park Service

assumed administration of Fort McHenry, the park was offered custody of a large local private collection of military firearms. Carl Russell visited the fort in February 1935 and worked to support display of the collection there, although it had little to do with the fort's primary historical significance. He gave no indication that he thought of refurnished rooms or considered the fort a historic house museum subject to Coleman's guidelines.[18]

The park perhaps took a broader view. In April 1936, apparently at local initiative, the National Society of the United States Daughters of 1812 gave the Service reproduction furnishings for some of the officers' quarters at Fort McHenry. According to a contemporary account, "Pieces presented were carefully reproduced from data and sketches assembled after months of research on the part of antiquarians, museum curators and historical technicians."[19] Although Coleman's book advised against mixing formal exhibits with furnished rooms in historic house museums, the Service empirically concluded that it was acceptable to do so under specific conditions. A fort, for example, might contain so many similar rooms that appropriate formal exhibits might occupy some of them effectively separate from those furnished.

The third structure obtained from the War Department and listed as a historic house museum had only one room. At the site of Abraham Lincoln's birth a simple log cabin, then widely believed to have been the one in which Lincoln was born, had been enshrined in a classic memorial structure. As a symbol, the cabin did not call for the kind of interpretation to which refurnishing would contribute. Neither the War Department before transfer nor the Park Service afterward undertook to treat it as a museum.

The remaining museum on the 1933 list, the Ford House described earlier, came to the Service that year with the establishment of Morristown National Historical Park. Shortly after the new park received Public Works Administration funds for a new museum building, the acting superintendent announced plans "to remove most of the contents of the Headquarters Mansion to the new museum when completed and to refurnish the house as nearly as possible as it was during the Revolution."[20] This statement, made surprisingly early in development planning, indicates an intent to bring the existing historic house museum into step with Coleman's guidelines. Thomas T. Waterman, a historical architect of established reputation, undertook a careful analysis and restoration of the Ford House. Park historian Melvin J. Weig followed with a report aimed at improving the authenticity of the furnishings, but the house reopened looking much too fine and comfortable to reflect conditions during Washington's occupancy.

Park Service house museums tripled in number between 1933 and 1941. Especially notable additions included the Wick farmhouse at Morristown where General Arthur St. Clair had quartered during the winter encamp-

ment. After park historians and architects had done basic research and restoration, wealthy local patrons of the park contributed furnishings deemed appropriate. CCC enrollees tended a suitably designed garden beside the house.[21]

Secretary of the Interior and PWA Administrator Harold Ickes personally promoted a different sort of historic house museum in Washington, allotting PWA funds to restore Pierce Mill in Rock Creek Park. On a March Sunday in 1937 more than 1,400 toured the restored structure. Volunteer guides recruited by park naturalist Donald E. McHenry included staff from the Museum Division in one of the first occasions of its active participation in a house museum project. Visitors watched the water wheel turning, the millstones rotating, and the miller controlling the flow of grain and meal through the belt-driven conveyors. The ground meal was sold to the public and sent to government cafeteria kitchens.[22]

On the heels of this success the Service acquired an entire industrial community to develop. Hopewell Village (now Hopewell Furnace) National Historic Site, established in 1938, required restoration of an iron furnace and numerous surviving auxiliary structures. CCC workers already had begun the task. The park developed interim interpretation of the complex site, but serious attention to refurnishing the structures came after the war.

Another new park accounted for two more historic structure museums. Designated also in 1938, Salem Maritime National Historic Site included the Derby House, already open as a museum. The Society for the Preservation of New England Antiquities had acquired this house in 1927, made necessary repairs, installed items of furniture, and begun admitting visitors in 1928. When the Park Service became responsible, historical architect Stuart Barnette supervised a more thorough restoration of the structure starting in 1938. Edwin W. Small, the park's able superintendent, skillfully guided the refurnishing.[23] Within the historic site the Salem Custom House also fitted the prevailing definition of a historic house museum. The park opened the building to visitors, partially furnished one room to recall Nathaniel Hawthorne's employment there, later installed formal exhibits in another room, and made various uses of the available space as development plans for the site matured.

The Custom House with its mixed and changing utilization typified two more of the new historic structure museums. The Philadelphia Custom House became a national historic site in 1939, and the Old Courthouse in St. Louis became part of the Jefferson National Expansion Memorial in 1940. Both were architecturally important structures that would be adapted to new uses. The list of old forts entrusted to the Service grew to include Fort Jefferson, Florida, Fort Pulaski, Georgia, and Fort Laramie, Wyoming. The latter, quite different from the coastal fortifications, would later tax Service expertise in historic furnishings.

During the prewar years historic house museums in the parks fitted a general development pattern marked by three aspects. The strong central architectural organization of the Park Service recognized its responsibility when a historic structure needed to be preserved and exhibited. Under its aegis a qualified historical architect analyzed and evaluated the building, planned and supervised necessary restoration, and to an increasing extent made a faithful record of the process. In the parks staff historians began to contribute their research in cooperation with the architect. When it came to refurnishing a building to complete the recreation of the historic scene, the Museum Division offered the park little help. Although Carl Russell had encountered the Tumacacori Mission, the Moore House, and Fort McHenry at early stages of development, furnishing problems had not fired his interest. His staff had their hands full planning and building other kinds of exhibits. Consequently park superintendents proceeded on their own initiative to get historic house museums refurnished. Following practices common outside the Service, they obtained installations tilted more toward decorative arts displays than strict historical verisimilitude.

The park system expanded so much during the 1930s that no one had a clear grasp of the overall state of museums in it. The Museum Division did not know precisely how many museums the parks contained, their scopes, sizes, extent of development, staffing, or amount of use. In 1939 it launched a thorough survey to find the answers. Division staff tabulated and analyzed the returns to get a comprehensive view of Park Service museums as of June 1940.[24] Of the total of 114, 38 were historic house museums, defined as historic buildings of any sort—original or reconstructed and furnished or not—that were primarily on public exhibition as survivals of the past. To avoid an inflated list the analysis counted an organic group of historic structures such as Hopewell Village as a single museum. Thirteen of the 38 were furnished, 18 still needed to be, and seven were forts that did not appear to require furnishing. The historic house museums received about 1,250,000 visits annually.

The division could no longer overlook their needs. As a first step the *Field Manual for Museums*, in preparation while the survey was in progress, incorporated a chapter on historic house museums. It reinforced guidelines Coleman had offered in his 1933 book. Park Service house museums should meet the criterion of national significance. Each should be able to present particularly well a broad aspect of American life, or should have important association with the life of a great American, or should have been the setting of a memorable incident in American history. Architectural merit carried little weight. Assuming that most of these museums would be furnished, the chapter stated that interiors should represent the conditions that existed at the time of significance. It cautioned parks to undertake furnishing only in consultation with experts and on the basis of carefully

prepared and approved plans, newly required by implication in a concurrent directive. Parks should also ensure that outsiders who cooperated in furnishing projects agreed to abide by the decisions of the experts. Installation of formal exhibits in a house museum would require approval by the director as an exception to policy. The chapter clarified the status of historic furnishings as museum specimens subject to Service curatorial policies and procedures and included advice on maintenance and operational matters.[25]

Events in the field soon drew the Museum Division into more active participation. In 1940 the Frederick W. Vanderbilt mansion in Hyde Park, New York, became a national historic site, the gift of Vanderbilt's niece. President Franklin D. Roosevelt, whose home stood nearby, showed interest in its preservation. The great house, its landscaped grounds, and its elegant furnishings posed many fresh problems of maintenance and interpretation. Superintendent Francis S. Ronalds of Morristown represented the Service in the transition to park management. Responsibility for the wealth of furnishings impressed him especially, and he sought the advice of division chief Ned Burns. Burns visited the site in April 1940 and underlined its museological problems in a statement of urgent needs he prepared for Director Newton Drury. He continued to advise and assist the new park with its curatorial concerns and had the museum laboratory prepare approach signs for the mansion as well.[26]

Museum Branch Involvement, 1946–1955

Philosopher John Dewey, a founder of the progressive education movement, contended that students' interest needed to be aroused before expecting them to undertake the hard work of learning. (This concept may still influence modes of park interpretation.) Other educators believed instead that subjects grow in interest as students labor to master the fundamental details necessary to understand them. Certainly the lively and productive interest of the Museum Branch and its successors in furnished structure museums appears to belie Dewey. It developed slowly as a result of problems encountered and in some measure surmounted. Branch personnel found themselves drawn into laborious aspects of their development or operation as Service responsibilities expanded.

The Vanderbilt Mansion was a case in point. Another was the White House, for which the Park Service had received important housekeeping responsibilities in the 1933 reorganization. Its state rooms, containing treasured pieces from various presidencies, had been redecorated by a recent administration with the advice of a select committee of public-spirited citizens. In 1940, at Eleanor Roosevelt's request, the Service's National Capital Parks office undertook a special report on their furnish-

ings. It included floor plans indicating furniture placement, photographs of room interiors with the furniture in place, and individual photographs of each piece. Park historians set out to compile the history of each, digging through General Accounting Office records to find the acquisition documents.[27]

National Capital Parks had no scholarly student of furnishings to analyze and identify the objects themselves. Knowledge in this field was rare because much basic research on furniture remained undone. Most people regarded as experts were antique collectors or dealers at best. An ill wind brought enough opportune help to emphasize the need. Hans Huth, a true scholar in such matters who had been forced out of Germany under the Nazi regime, became available to the Service's History Division for a time beginning in early 1940. While other assignments took most of his attention, Huth made a few discreet studies of White House furniture that clarified some points.[28]

The war years intervened before the Service could expand its attention to White House furnishings. When park historian T. Sutton Jett returned from naval service, he received broad responsibility for historical work in National Capital Parks. Jett saw that the White House furnishings composed a nationally significant museum collection that needed cataloging and arranged for Ralph Lewis to be detailed from Jefferson National Expansion Memorial for the purpose. Reporting to Washington in June 1946, Lewis took part in the required annual White House property inventory with Jett and historian Stanley McClure to become acquainted with the collection, then developed a plan for the cataloging in on-site discussions with Ned Burns and Chief Historian Ronald Lee. He returned to Washington in August to spend a week with Jett and McClure applying catalog numbers to furnishings in the family quarters while President Harry S Truman and his family were away. Lewis's transfer to Washington that December in connection with the reopening of the museum laboratory enabled him to sandwich work on the White House catalog among other assignments. He continued on the project intermittently for the next year and a half before laboratory responsibilities left no further time for it.[29]

Another involvement began in December 1946. Chief Historian Lee was deep in strategic planning that would lead to creation of the National Trust for Historic Preservation. He looked to David Finley, director of the National Gallery of Art, as a potential ally. Finley in turn had become interested in Hampton, a great 18th-century house near Baltimore from which he was acquiring two fine portraits for the gallery. Architectural historians considered Hampton a prime example of Georgian architecture, and Finley proposed its donation to the Park Service. Lee wrestled with two policy questions: Should the Service undertake to preserve a structure significant primarily for aesthetic qualities? If so, could the Service

justifiably depend on outside support to manage it? He could not foresee adequate congressional funding for this purpose. He finally concluded that legislative mandate and national interest justified Service acceptance of Hampton as a national historic site even if some private organization had to be found to operate it.[30]

While pondering these questions Lee outlined to Lewis, as the Museum Branch representative at hand, the furnishings aspects of the proposal. They spent December 19 at Hampton viewing and discussing the furnishings with the aging owner. Lewis then drafted a skeletal inventory with recommendations for exhibition. Occasions continued to arise before and after Hampton's acquisition for Museum Branch assistance in furnishing matters.[31]

Sutton Jett had as much concern with Arlington House as with the White House. In December 1946 he consulted the Museum Branch on cataloging the furnishings there and continued to enlist help with the mansion's museological problems. Jett grasped the basic importance of solid research in solving the dilemma of Arlington's too-rich and too-early furnishings. He succeeded in releasing the site historian, Murray Nelligan, for some two years of intensive study at the Library of Congress. Nelligan's analysis in depth of Arlington's occupants and their life on the estate undergirded the future development and interpretation of the house. It also provided an object lesson for the Museum Branch in attacking future furnishing problems.

The return of Park Service headquarters from Chicago to Washington in October 1947 enabled Ned Burns as branch chief to keep in closer touch with the expanding activities of his staff for furnished historic structure museums. He had not forgotten how vulnerable to deterioration many of the furnishings at Vanderbilt Mansion were. Service acquisition in 1945 of full responsibility for the neighboring Home of Franklin D. Roosevelt National Historic Site reinforced his concern for such problems. In March 1947 he arranged the transfer of preparator Albert McClure from the reopened museum laboratory in the Ford's Theatre building to Vanderbilt Mansion. McClure would function as a curator and objects conservator, although the latter was still an unnamed and scarcely recognized field of specialization. He would maintain a close watch on the condition of the furnishings, provide hands-on cleaning, reinforcement, and repair of pieces at risk when he felt qualified to do so, and call in specialists as necessary. He performed other strictly curatorial duties, and the park took advantage of his skills as a fine letterer and craftsman.

Through such decisive actions Burns earned widening respect for his grasp of technical problems and judgment in matters of historic furnishings. Henry Francis du Pont, laying plans to convert his great collection of period rooms to a public museum, consulted him in December 1950. During

his visit to Winterthur Burns noted aspects of du Pont's operation that might prove applicable to Service historic house museums like Vanderbilt Mansion. Soon afterward Burns visited Vanderbilt Mansion and the Home of Franklin D. Roosevelt to review their furnishings care and share what he had learned at Winterthur.[32]

In January 1951 the Park Service took over administration of Independence Hall and other structures in the nascent Independence National Historical Park. The buildings and the national treasures they contained remained in Philadelphia's legal ownership, but this only heightened Service responsibility for their stewardship. As noted previously, Burns promptly sent James Mulcahy from the museum laboratory to become curator of the Independence collections. Since McClure's transfer to Vanderbilt Mansion Burns had become much more aware of the scientific basis underlying the emerging profession of conserving historic and artistic works. He therefore did not expect Mulcahy to act as an objects conservator. Instead, when the need arose, the curator would call for thoroughly qualified help through the Museum Branch. As an early example, Mulcahy sent two important chairs to the laboratory where Burns could personally supervise the analysis of their condition and such restoration as they required.[33]

The many complex problem areas facing the Service in the postwar years prompted the Washington Office to prepare and assemble better guidelines in a multi-volume *Administrative Manual.* A 1949 issuance had nothing new on house museums, but a 1952 volume expressly limited the term "historic house museum" to historic structures exhibited with furnishings. A revised statement of Coleman's stricture against putting systematic exhibits in a furnished structure followed. But if a structure did not require furnishing for its proper interpretation, it might in some circumstances house a regular park museum without serious loss. Similarly, if a large building needed only one or two rooms furnished to interpret its significance, museum exhibits might occupy other rooms. That year the Museum Branch listed 101 museums open to the public in the national park system. Fourteen of them met the new definition of historic house museum.[34]

In Philadelphia the project staff developing the authorized but not yet established Independence National Historical Park faced the challenge of restoring and refurnishing Independence Hall. The Service needed to determine the nature and condition of the building inside and out as it was in 1775–87, then recreate as closely as possible the setting of the great events that occurred there. The work on this preeminent national treasure obviously had to meet the highest standards of accuracy.

Architects led by Charles Peterson and historians by Edward M. Riley undertook essential research. After three years of intensive study the historians estimated that they still needed to examine some ten million more

documents. As the magnitude of the problem became clear, so did the need to augment appropriated funds. In October 1952 project representatives conferred informally with officials of the General Federation of Women's Clubs. Eight months later the federation and the Service reached a formal agreement. The federation would undertake to raise a considerable sum of money with which the Service would restore and refurnish the first floor of Independence Hall.

Ronald Lee, charged with setting up a committee of outside experts to advise on this major project, involved the Museum Branch in selecting its three members. Louise du Pont Crowninshield (Henry du Pont's sister) brought assets of long association with historic furnishing projects, including those at George Washington Birthplace National Monument and Salem Maritime National Historic Site, and was active in support of the National Trust. As curator of the Henry Francis du Pont Winterthur Museum, Charles F. Montgomery ranked high among scholars refining available knowledge on the material culture of 18th-century America. Charles Nagel, an architect by profession, had much experience with American decorative arts as director in turn of the St. Louis City Art Museum and the Brooklyn Art Museum and curator of the great Garvin Collection at Yale. Lee and branch chief Ralph Lewis attended their meetings to keep in touch with their recommendations and reactions as work on the Assembly Room progressed. The committee received an extensive report from the project staff in January 1955.[35]

The staff had already called on the Museum Branch for specific help. Project researchers became particularly interested in an old painting owned by the Historical Society of Pennsylvania showing the Continental Congress meeting in the Assembly Room and voting on the Declaration of Independence. Tradition attributed the painting to either of two Philadelphia artists who might have witnessed the event, Robert Edge Pine or Edward Savage. The historical society allowed the Service to borrow the painting and let the Museum Branch paintings conservator clean it. Close, critical examination during and after cleaning revealed to the fullest extent possible the valuable information it recorded.[36]

Evolution of the Furnishing Plan, 1955–1982

To consolidate the various statements of Park Service museum policy that appeared during the 1930s, the director issued a lengthy memorandum applicable to all types of museums in March 1940. It reaffirmed the official status of these directives prior to their fuller discussion in the forthcoming *Field Manual for Museums*. "The necessity for adequate museum exhibit plans cannot be stressed too strongly," the memorandum declared. The *Field Manual* in turn stated explicitly, "The furnishing of a historic

structure should be undertaken only . . . on the basis of a carefully prepared and approved plan."[37] Both specified that an exhibit plan should receive the recommendation of the park superintendent, the regional director, and the Museum Division plus concurrence by the chief architect, the supervisor of historic sites, and the supervisor of research and information before submission to the director for approval. Both also provided specific advice on the preparation and content of exhibit plans for park museums but none for historic house museums except to consult a specialist. No one in the Museum Division, or perhaps elsewhere, had a clear conception of what should constitute a historic furnishing plan.

In 1955, for the first time, a park superintendent asked the Museum Branch to help prepare a furnishing plan. Andrew Johnson National Monument owned and exhibited under unsatisfactory circumstances the house that Johnson had bought in 1851 and held until his death. Funds had become available to restore it properly, involving painstaking research by historical architects, and its furnishings needed to meet equivalent standards. Complicating matters was the fact that the President's great-granddaughter, employed by the park to help oversee and interpret the house, wanted the house and furnishings to memorialize her grandparents as well as the President. She still owned significant furnishings and skillfully pressed her claims through political channels.

Responding to the superintendent's request, Ralph Lewis was able to spend four days at the park in July. He viewed the current furnishings and discussed the complexities of the task with the superintendent, house custodian, regional historian, and architect Charles Peterson. On this basis he drafted a tentative document that defined the specific interpretive purpose the museum should achieve, recommended furnishing the whole house as Andrew Johnson occupied it during 1869–75, and justified doing so room by room. Five attachments accompanied it: a review of the occupancy of the house throughout its ownership by the family (1851-1948); a discussion of changing uses of the rooms; proposed lists of furniture for each room according to three options (conforming to the 1879 inventory, using the furnishings currently exhibited in the house, or using only those items owned by the Service); a copy of the 1879 inventory; and a list of what the park would have to acquire to match it. The director approved this sketchy submission and hoped that it could be carried out in coordination with the architectural restoration.[38]

From this first attempt at preparing a furnishing plan the Museum Branch learned that it lacked both the time and the specialized knowledge to provide what the Andrew Johnson project needed. It therefore arranged to borrow for the park the services of Vera B. Craig, museum curator at Morristown, whom the branch considered especially well qualified for the task. Her assignment called for a more thorough furnishing plan that would

Vera B. Craig. Staff curator and expert furnishing planner.

link the objects with Johnson's occupancy. She would also catalog the furniture and designate the items needing restoration or repair. She spent two weeks of hard work at the park in March 1956 and much overtime refining the plan back at Morristown.

Craig's plan analyzed the 1879 inventory more expertly and correlated it with the rooms in the dwelling. A set of floor plans designated the historic use of each. She chose the items to go in them, listed them by catalog number, and gave reasons for their selection. Estimated costs accompanied a room-by-room list of additional furnishings needed. Floor plans showed the intended placement of the furniture and such added details as window dimensions. The branch received this substantive plan in early May and routed it for review like a park museum exhibit plan. In doing so it acted in accordance with the previously unused directive for furnishing plans issued in 1940 and repeated in the *Field Manual*. The July 13 transmittal to the director stated: "This is the first formal furnishing plan submitted for any of the Service's historic house museums. We regard it as a museum exhibit plan which should receive regular review and approval. It is hoped that in the future historic houses will be developed in accordance with such plans."[39] Director Conrad Wirth's approval the same day signaled establishment of a regular furnishing plan procedure.

Craig's plan lacked the systematic structure that would later develop, but it stood in sharp contrast to earlier Service practice and common practice outside the parks. It undertook to recreate accurately a historic environment for its historical significance, the proper justification and purpose of historic house museums in the national parks. Such museums would no longer aim to display artifacts in congenial settings as antiques or works of decorative art.

Putting into effect the provisions of an approved furnishing plan also required specialized curatorial knowledge and skill not ordinarily available in a park's existing staff. In June 1957 Craig, who had by then transferred

to the Museum Branch as a staff curator, resumed active involvement in the Andrew Johnson project. She and Henry A. Judd, the restoration architect, set a fine example of interdisciplinary collaboration as they conferred on selecting interior paint colors, wallpaper, and lighting fixtures, features of concern to both professional specialists. As the park obtained funds in the 1958 fiscal year to purchase needed furnishings, she assisted at critical points. She secured from a disaffected branch of the family a suite of "cottage" bedroom furniture matching the 1879 inventory and oversaw reproduction in the museum laboratory of painted oilcloth floor covering for the entrance hall.[40] Continuing need for her support demonstrated the problem of staffing and funding furnishing projects over an unavoidably extended period of time. Finding qualified furnishing curators to prepare the plans remained the first essential hurdle.

The need for another curator arose soon after the Andrew Johnson request. Service historical architects had recently restored Mount Locust, one of the original taverns along the Natchez Trace Parkway. The restored building required a furnishing plan and the Museum Branch was again asked to help. Probably at the suggestion of the architects the branch chose Worth Bailey to prepare it. Trained as a landscape architect, Bailey had become an able student of American material culture while supervising CCC enrollees at Colonial National Historical Park. He left the Service in 1939 for twelve years of curatorial work at Mount Vernon and was later employed by the National Trust. Fortunately the branch found him available, and he accepted temporary appointment as a consultant in April 1956. His plan for Mount Locust, approved by the director after full review in January 1957, proved scholarly and thorough.[41]

As the Mission 66 development program got underway, the prospect of more restoration and refurnishing projects seemed assured. This would require more furnishing planners, and a tentative search began. At the same time the branch undertook to refine its ideas of what a furnishing plan should contain. A field order issued February 4, 1958, restated the rule that exhibition of the interior of a historic structure required an approved furnishing plan, then specified six elements the plan must contain.[42]

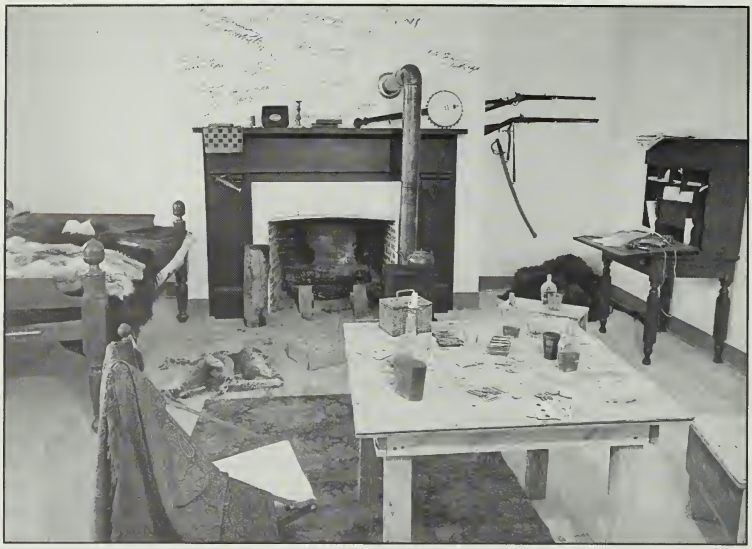
The first section (a) centered attention on the interpretive purpose, essential to justify development. The next section (b) defined the facts and ideas the furnished space would embody in a documented narrative of the historic occupants. All the evidence that could be found about furnishings present at the historic time composed the third section (c). With this foundation laid, the plan would proceed to specify in detail the furnishings to be exhibited (d). The fifth section (e) would supplement these specifications with floor plans and wall elevations to fix the location of each piece. Notes on sources and estimated costs for acquiring the furnishings (f) would complete the plan. The instructions suggested that the park historian would

usually prepare the first three sections but expert help from outside the park would probably have to supply the remainder. Plans drafted during the next several years followed this directive in general.

The plan for Philip Schuyler's house in Saratoga National Historical Park, among the first to do so, demonstrated the workability of the prescribed format. Vera Craig visited the park for preliminary discussions in June 1958. Prepared by Craig and Worth Bailey with excellent support from the park's able historian, the first four sections of the plan were submitted in May 1960 and the balance a year later. Saratoga also requested help with a furnishing plan for the small Neilson farmhouse, prominently located on the battlefield. For this the branch turned to a National Capital Parks historian, Agnes Downey, who tackled the Neilson House plan in February 1960 and submitted it in September.[43] Downey had shown initiative and skill in furnishing and interpretive matters at Arlington House and the Old Stone House in Georgetown and would break new ground at Manassas National Battlefield Park by restoring the Stone House rooms to their brief wartime appearance as a field hospital.

In December 1959 Mrs. Charles S. Hill of Evergreen, Colorado, proposed to give the Park Service $100,000 over five years to refurnish ten of the restored buildings at Fort Laramie. Needing furnishing plans, the regional office moved quickly to recruit Sally Johnson, a curator with the Nebraska State Historical Society previously interviewed by Ralph Lewis and John Jenkins. Johnson drafted a strategic plan for the entire project, approved in July 1960. By January 1961 she submitted a thoroughly researched and detailed furnishing plan for Officer's Quarters F tailored to known occupants, Lieutenant Colonel Andrew S. Burt and his family. Upon its approval she began tracking and acquiring the specified furnishings, including some actual Burt pieces. Her success enabled the park to show Mrs. Hill the first fruits of her gift at the formal opening of the quarters in June 1961. Meanwhile she worked on additional plans, completing the difficult one for the Sutler's Store in August and for Officer's Quarters A in November. She continued work on the execution of these plans until July 1962 when family responsibility necessitated her resignation.[44]

To fill her place the region hired Nan V. Carson, a talented student of western history and its material culture aspects. She undertook the remaining plans with vigor and imagination, continuing to emphasize accuracy in recreating settings of life at Fort Laramie based on careful research and close collaboration with the historians. Faced with furnishing a fourth set of officer's quarters, she obtained needed variety by postulating a typical post surgeon and his family. Characteristic of her work were many details she specified for the bachelor officers' quarters in Old Bedlam, the post headquarters. The unkempt masculine impression she strove to achieve in this instance had a fragility threatened by every visit of the park's house-



Refurnished bachelor officers' quarters, Fort Laramie National Historic Site.

keeping staff. She therefore supplemented the Old Bedlam furnishing plan with an "interpretive maintenance plan" giving helpful instructions to the housekeepers. Cleaning should not remove the splatters of tobacco juice, graffiti, and overall griminess contributing to the historic atmosphere. The staff would need to keep rooms elsewhere in the same building as spotless as the commanding officer's wife would have expected in her quarters.[45]

At Independence National Historical Park the planning responsibility fell particularly to David Wallace. As noted previously, he became the park's museum curator in 1959 when the Museum Branch recalled James Mulcahy to Washington. Independence Hall still needed furnishing plans for portions of the building and further work in the Assembly Room. Several other structures including Congress Hall, the Bishop White House, and the Todd House would also require furnishing as their restoration neared completion. Wallace assembled a staff capable of preparing the plans, finding and acquiring the furnishings, and sensitively installing them. His team included four unusually well-qualified furnishings curators: Frederick B. Hanson, Ruth Matzkin Knapp, and John C. Milley, graduates of the Winterthur Program, and Charles G. Dorman, a recognized authority on Delaware furniture from the Smithsonian Institution.[46] To meet target dates Wallace borrowed Agnes Downey for the Todd House plan. He and

his curators collaborated with several Independence staff historians in plan production and maintained close liaison with the architects restoring the buildings. The results of this team effort, alongside those at Fort Laramie and the work of Craig and Downey in Washington, demonstrated the value of furnishing plans patterned on the 1958 instructions.

Out of the experience gained came constructive changes. To speed review of needed interpretive plans of all kinds the Washington Office issued a field order in 1960 shifting their approval from the director to regional directors. Although this appeared to eliminate one level of critical examination, the order stated that a regional director's approval of a furnishing plan would carry assurance that the Museum Branch and other pertinent specialists had reviewed the plan.[47]

More substantive changes affecting furnishing plans accompanied formal establishment of the historic structure report in 1957. This comprised three parts. Part I defined the park purpose the structure would serve and spelled out how the park intended to maintain and operate it after completion of the proposed development. If it was proposed to furnish the structure for exhibition, this part signaled the need for a furnishing plan and for programmed funds to execute it. It also provided a history of the structure based on documentary research and when relevant included any data found on its historic furnishings. Part II, the core of the report, presented the results of architectural and archeological research on the structure, including any evidence relating to its furnishings. Part III was a completion report recording precisely what had been done to the building.

Expanded guidelines for preparing historic structure reports accompanied the "Inventory with Classification and Work Code for Historic Buildings and Structures" issued in November 1960. This document left a gap in the instructions for Part II under "furnishings and exhibition data." At the chief architect's request the Museum Branch recommended the outline later inserted for this section.[48] It called for a statement of the evidence that architects or archeologists had found suggesting how the building had been furnished along with any documentary references to the furnishings they had encountered. The outline also requested the architect's appraisal of the tastes and style he found reflected in the structure itself that might have echoed in the occupants' choice of furnishings. Such information increased the linkage between the historic structure report and the furnishing plan.

The nature and extent of this linkage made it apparent that the furnishing plan should regularly be prepared after Part II. Only in this sequence could the furnishing plan safely analyze the conclusions of the architects, archeologists, and historians who had studied the building thoroughly. Even closer dovetailing of the historic structure report and furnishing plan became desirable. The furnishings curator who would work

on the plan could help the architect and archeologist as they searched for and interpreted clues to the nature or placement of furnishings left in the building fabric or unearthed on the site, and the historian who documented the structural history for the report could often most efficiently pursue the history of the building's occupancy for the furnishing plan.

In one respect the two documents differed conceptually. The 1960 inventory of historic structures under Park Service custody classified each structure in one of three categories. Class A structures had prime historical or architectural significance, Class B structures formed part of a historic scene, and Class C structures provided settings of typical lifeways. Because of the high costs and exceptional skills involved in architectural restoration, the three classes were made subject to different levels of research and restoration. The Museum Branch, however, could not accept anything other than one standard—the highest attainable accuracy—for furnishing plans and for the museums developed from them.[49] While this position reflected basic museum philosophy, the single standard encountered some difficulties in application.

Most problems in maintaining high quality for furnishing plans arose in parks faced with developing several historic buildings under pressure. In the early 1960s, for example, Yosemite National Park attacked the problem of overcrowding in Yosemite Valley by developing other points of interest in the park. One such project was the Pioneer History Center at Wawona, resembling in concept a European open air museum. The park moved seven of its smaller historic structures to the site and undertook to furnish them as exhibits. The park interpreters submitted brief furnishing plans for most of them, including an early superintendent's office, a Wells Fargo office, a cabin used by a cavalry detachment, a ranger patrol cabin, and an artist's studio. The Museum Branch concurred in the plans reluctantly in the hope that the park had on file much more historical data than the planners had included. The work proceeded without the careful study and preparation the refurnishing deserved. Seventeen years later and after many thousands of park visitors had viewed the installations, a collection preservation guide for the park could only conclude that all seven buildings still needed adequate furnishing plans.[50]

Another example occurred at Appomattox Court House National Historical Park. Here historic buildings, original and reconstructed, constituted the principal park features. The reconstructed McLean House reproduced the parlor in which Grant and Lee had reached agreement on the terms of surrender virtually ending the Civil War. Ample evidence existed to refurnish it accurately, and the Museum Branch assisted in doing so. Although this was the proper focal point of the site, interests in the surrounding area pushed for fuller development. The park decided to furnish not only the rest of the McLean House but several other village

structures. Initial help from the regional office led to furnishing plans of sorts for a general store and a law office in addition to the surrender house. The plans appeared inadequate to the Museum Branch reviewers, as did the resulting installations. Stock displayed in the store, for example, failed to suggest conditions of deprivation caused by the war.[51]

A third park where furnishing plans fell short lay at the doorstep of interpretive planning headquarters. The Harper House at Harpers Ferry National Historical Park was the beneficiary of an excellent furnishing plan (1960–63) by Vera Craig in sometimes difficult collaboration with the local garden council.[52] About a decade later the park launched a crash program to revitalize other historic buildings in the lower town. Much research and restoration remained to be done, but there seemed need to show immediate results. Pressure no doubt came from Harpers Ferry Center management, eager to demonstrate state-of-the-art interpretation. "Living history" was at its apogee and the park needed appropriate sites for such activity. The Service also realized the political expediency of a good show at Harpers Ferry. In consequence the park moved energetically to recreate in available buildings a general store, a pharmacy, a law office, a provost marshal's office, and a tavern. Installed without the formality of furnishing plans, they violated curatorial standards entailing time and patience.

Such failures in the system were not inevitable. Hopewell Village (later Furnace) National Historic Site also had several structures it needed to furnish. One of the specialists assigned to architectural restoration in the park, Norman M. Souder, obtained permission to work on furnishing plans as well. Thanks to his intimate knowledge of the structures and their occupancy, the office/store and later a tenant house received installations of first-rate integrity.

The contrast between furnishing projects thoroughly planned and those that stinted planning appeared obvious, at least to the Museum Branch. In its 1963 statement to the director's Long Range Requirements Task Force, the branch consequently urged "the preparation and critical review by experts of furnishing plans for all historic house museums in the parks." The branch had in mind existing as well as new installations. After reorganization of the central museum staff in 1964, the new Branch of Museum Operations to which furnishing matters were assigned could focus more thought and effort on them. A conference of regional curators it convened that September concluded that the Service was "falling behind the best current standards and practices in the maintenance, operation and interpretation of its historic house museums."[53] This statement supported branch staff in revising guidelines for the furnishing plan.

Concurrently another unit of William Everhart's Division of Interpretation and Visitor Services made a fresh start on an interpretive planning handbook aimed at incorporating Everhart's new approach to park

interpretation into the interpretive prospectus. The Branch of Museum Operations submitted a chapter containing revised furnishing plan guidelines in May 1965. It was never added to the handbook, which was never formally released; instead the branch distributed individual copies of its chapter as needed. This secured the effective application of the revised guidelines well before their Service-wide issue in January 1968 as part of the *Museum Handbook*.

Under the revised guidelines the furnishing plan still consisted of six parts, a through f. Part a, essentially the same, spelled out in more specific detail than did the interpretive prospectus the interpretive purposes the furnished structure should fulfill. Part b told how the park proposed to operate the museum in terms of visitor use, interpretive services, maintenance, and protection. The analysis of historic occupancy became c and the available information on original furnishings became d. Part e specified in detail how the structure should be furnished, consolidating the material formerly assigned to d, e, and f. Part f contained the curator's cautionary advice on special installation requirements, maintenance, and protection.

Organizational developments in the Service had by this time clarified normal production responsibilities for the various parts of the plan. The chief park interpreter ordinarily commanded the knowledge necessary to prepare parts a and b. Historical research had largely become the function of a centralized professional staff, and parts c and d became a programmed resource study normally assigned to one of its research historians. Completion of these four sections provided the basis for a furnishings curator to draw up parts e and f.

The validity of a carefully furnished structure as a historical document was especially vulnerable to erosion. If housekeepers and interpreters made small changes in arrangement or content as they performed their daily duties, cumulative results could undermine the installation's integrity. To control such alterations the guidelines offered two provisions. The furnishings curator should revise part e at the conclusion of the development project to match exactly the furnishings as installed. The approved plan would thus become a continuing baseline. Future changes in the furnishings (which might well be justified) would require approved revisions in the plan.

Responsibility for the plan's various parts remained rather flexible at first. Branch staff might prepare a draft for parts a and b to assist or prod a park interpreter in getting a plan started. The furnishings curator assigned to do e and f might also work on c and d if a historian were unavailable. Curators sometimes preferred to prepare all four of those parts. Establishment of c and d as a resource study to be carried out by a historian who might not understand the whole planning process complicated relations across organizational lines. A meeting in January 1973 between David

Wallace, chief of the Branch of Museum Operations and Harry W. Pfanz, chief of the Branch of Park History, clarified matters.[54] Both sides came to see that the historians dealt with a resource study and the curators with a development plan. The essential unity between study and plan counterbalanced such overlapping as occurred in their preparation.

Changes continued in Service planning procedures. Most planning came to emanate from the Denver Service Center. Under its methods parts a and b of the furnishing plan composed what DSC called a planning directive. DSC normally assigned one of its professional planners to prepare the directive in consultation with the park and, for a furnishing plan, with curators at the Harpers Ferry Center. Parts c and d became Part I of a historic furnishings report prepared by a DSC research historian. Parts e and f, redesignated as Part II of the furnishings report, remained the task of furnishings curators assigned by HFC. Essentially unchanged in function and content but with fresh names for its components, the plan reflected a more systematic division of labor undoubtedly intended to improve efficiency and increase the document's overall professional stature. Guidelines for the furnishing plan adjusted accordingly were reissued in 1976.[55]

Procedure continued to be the most mutable aspect of the plan. When David Wallace took charge of the new Branch of Reference Services he retained responsibility for preparing and implementing furnishing plans. At first only he and Vera Craig had the knowledge required to do so. Without slighting the other undermanned services assigned to him, he set out to build a staff of well-trained furnishings curators such as he had earlier assembled at Independence National Historical Park. In June 1977 he hired John Demer, who had been trained at Winterthur and the Cooperstown Graduate Program and who had been curator of the venerable Concord Antiquarian Society and the Renfrew Museum. Three months later Katherine Menz, a Winterthur graduate, transferred to the branch from her position as curator at the Home of Franklin D. Roosevelt and Vanderbilt Mansion national historic sites. John P. Brucksch, a historian by training, came to Wallace's staff from the curatorship of the Andover Historical Society in early 1978. That November Sarah M. Olson transferred from DSC, where she had been one of the able historians assigned to work on furnishing plans. She also brought valuable experience from an internship in decorative arts at the Boston Museum of Fine Arts. The existence of this talented staff tended to shift the balance in the furnishing plan process.

Other factors as well no doubt lessened the involvement of DSC. Soon after 1980 park superintendents resumed responsibility for defining interpretive objectives and drafting an operating plan as the first step in developing a furnishing plan. The experienced furnishings curators stationed at Harpers Ferry, and by then organized as a Branch of Historic

Furnishings, found it efficient as a rule to carry out the historical research on the occupancy of the structure and its furnishings before they undertook to specify the furnishings to be exhibited. Thus the park again produced what had been parts a and b, later called a planning directive. The furnishings curators in turn prepared a historic furnishings report that duplicated in content old parts c, d, e, and f. One further procedural change followed: in 1982 the Branch of Historic Furnishings arranged to have a collections management specialist, usually a curator from the Washington Office Curatorial Services Division, draft the concluding section of the plan concerned with special maintenance and protection recommendations (old part f).[56]

Earlier in the evolution of the furnishing plan two variant forms became necessary. Several of the most significant houses in the parks, including those of the Adamses, Franklin D. Roosevelt, Edison, and Vanderbilt, had come into Service custody with the furniture of their historic occupants largely in place. They required the faithful preservation of authentic historic environments rather than the recreation of such environments. The 1965–68 guidelines modified the furnishing plans for such museums. Sections a and b, the interpretive objectives and operating plan, remained relevant. The record of historic occupancy, section c, would assist interpreters and could be condensed from other documents. Section d would document the authenticity of the furnishings. The next section, e, would consist of a permanent record in photographic and inventory form of the furnishings and their arrangement. The concluding maintenance and protection section corresponded in importance to the unique value of the furnishings and their placement.

Other historic houses inherited by the Service as furnished museums or furnished by a park or cooperating organization without benefit of plan called for more skeptical treatment. The guidelines proposed that the furnishing plan for such a museum start from scratch, as though the structure were empty. Section e of the plan would then specify the furnishings the building ought to have. The plan would incorporate only those items of the existing furnishings that clearly fitted the historic setting determined by the thorough research of parts c and d. Both variants maintained the goal of the furnishing plan to make Park Service house museums reliable historical documents.

Operational Aspects, 1958–1982

Furnishing plans, although vital to the sound development of historic structure museums, proved only the first step. Implementing the plans resulted in museum collections that required maintenance, protection, and interpretation. In 1953 the Museum Branch asked Vera Craig to undertake

preparation of a housekeeping manual to help parks maintain the exhibited rooms. A year later the first regional curators' conference called for restraint in the proliferation of historic house museums and advised more care in executing cooperative agreements with outside organizations helping to develop and operate them in parks. By 1962 questions of interpretation in these museums were being raised. A year later the branch urged the director's Long Range Requirements Task Force to include "the establishment of standards and the provision of staff and funds for the . . . maintenance of the historic furnishings, and the development and application of imaginative and effective ways to present and interpret the structures."[57]

Following reorganization of the museum program in 1964, the new Branch of Museum Operations lost little time in launching two initiatives. The first was an informal study of historic house museum practices involving visits to thirty of these museums, only eight of which were under the Park Service. Ralph Lewis made most of the visits with his wife while off duty; Vera Craig made the remainder. Acting as ordinary tourists without identifying themselves, they began each visit with the first roadside sign noted and considered more than thirty aspects before exiting. The project developed a broad picture of current practices, highlighted a variety of solutions to common problems, and permitted some comparison of their effectiveness. The effect of approach factors on a visitor's frame of mind seemed especially significant. Perhaps surprisingly, the observers found no correlation between the dress of interpreters and the quality of interpretation. The reports noted numerous intrusive features that tended to break the spell of recreated historic environments.[58]

The second initiative stemmed from a recommendation of the 1964 regional curators' conference that the branch organize and conduct a seminar on the furnishing, interpretation, and operation of historic house museums. After an unavoidable postponement, the seminar was held in September 1966 at Vanderbilt Mansion National Historic Site. Ten people participated full time; twelve others joined in particular sessions. Out of their deliberations came ten carefully weighed recommendations, which served to raise the visibility of these museums among Park Service management.[59]

The first was for a change in nomenclature. "Historic house museum" poorly suited refurnished mills, offices, stores, and fortifications. To make clear that the standards, procedures, and guidelines for these museums applied to structures other than residences, the seminar recommended Service adoption of "furnished historic structure museum." While the old name remained in common use elsewhere, the Service gained precision by regular application of the new.

Another recommendation tried to address the problem of quality control over these widely dispersed and specialized museums. The Branch of Museum Operations, responsible for technical leadership in the development and operation of furnished historic structure museums, had no line authority over them. No procedure existed to pass expert judgment on the historical integrity of a furnished museum, the adequacy of its maintenance, or the effectiveness of its interpretation. Because the high professional competence of Chief Curator Harold Peterson extended to historic furnishings, the seminar report proposed that he be charged with conducting periodic studies of them in operation. As it turned out, Peterson could do little to carry out this recommendation: the perennial inadequacy of travel funds, insistent demands on him in connection with Bicentennial projects, and his failing health conspired to frustrate the plan.

More success came from another seminar recommendation regarding maintenance. Participants urged that furnished historic structure museums appear regularly on the agendas of regional maintenance conferences. Other training programs for maintenance supervisors followed similar practice. Some made a point of inviting a furnishings curator to take part. Such demonstrations of common interest tended to undergird the day-to-day collaboration between park maintenance staffs and curators essential to safe and effective housekeeping in these museums.

In preparing his *Manual for Museums*, Ralph Lewis found that historic housekeeping required the reconciliation of three different approaches. The maintenance approach normally applied to public buildings relied on established standards of cleanliness to prescribe cleaning schedules, materials, and techniques that would accomplish the purpose at minimum cost. It assumed that furnishings and building components wear out and are replaced as necessary. The curator on the other hand saw the furnishings and building as museum specimens that the Service was obliged to preserve and protect. Housekeeping methods must not put these often irreplaceable objects at risk. From the standpoint of the interpreter, current housekeeping needed to create the approximate appearance produced by the original housekeeper who might have used quite different procedures. Changes caused by modern cleaning methods would affect the integrity of the presentation.

Meshing these potentially conflicting requirements demanded further study. Lewis examined GSA's building maintenance manuals and those of other building management organizations that specified how often to clean interior spaces of different kinds and uses, what equipment and supplies to use, what standard techniques to follow, and the time required per unit area. Such instructions required much modification to fit the practices professional conservators had tested and found safe and effective for cleaning museum objects and historic surfaces. Cleaning agents, tools for

their application, techniques, and frequency had to be adapted to preservation imperatives without losing sight of cost-effectiveness. Then it became necessary to determine the cleaning methods and materials in common use during the 16O0s, 1700s, and 1800s. Lewis consulted every old domestic housekeeping guide in the Library of Congress, then tried to discover the visual results of obsolete practices. How, for example, did a floor look when scrubbed regularly with sand, brushed with crushed herbs, or swept after a scattering of damp tea leaves? Next came the problem of what safe and practical modern housekeeping method would produce a comparable appearance. From such studies came the guidelines finally issued as Chapter 11 in the *Manual for Museums*.

Chapter 12 on protection also drew from seminar recommendations. Discussions made clear that concern for safety should pervade the operation of furnished historic structure museums. The seminar consequently proposed and the directorate agreed that the museum's curator or interpreter should serve as a member of the park safety committee to keep it alert to hazards in the museum. A particular risk involved the changed function of the building. As a museum it often contained many more people than the original builder had in mind. Could they evacuate the building safely in an emergency? If doorways, stairways, passages, and exits failed to meet the standards for its new occupancy, what could be done? To alter structural features would threaten the historical integrity of the museum's prime specimen. The seminar recommended that when safety conflicted with integrity, the solicitor should guide the superintendent to legally acceptable alternatives such as limiting the number of visitors allowed inside at a time.

Protection also applied to the collections in these museums. Room barriers were generally considered necessary to keep historic objects beyond the reach of too curious or acquisitive fingers, but these could detract seriously from visitor appreciation of the historic environment. A few parks had demonstrated excessive caution by erecting clear plastic panels or boxes that shut the visitor out of the room. Floor-to-ceiling barriers of chicken wire installed in at least one park did the same while conveying an impression of shoddiness. Rope or cord barriers with frayed ends tied to doorknobs made equally poor impressions.

Visitors in general appeared to accept barriers that assured them where they should stand or walk to view a furnished room. A good barrier would invite them to examine the room and would stay out of their line of sight as they did so. Museum Operations helped develop neat rope barriers for the Old Stone House in National Capital Parks using shorter, thinner stanchions and black nylon rope. For the Stonewall Jackson Memorial Shrine at Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park, the branch devised a free-standing iron barrier that required no damaging attachment to historic woodwork. On the heels of the

seminar it proposed a sample barrier incorporating desirable features. The prototype was built to fit a door in Arlington House. Adults found the narrow wood top rail at a convenient height to lean on as they observed the features of the room. The thin but sturdy iron frame left an open viewing space below the rail for young children. In an emergency an attendant could lift out the barrier for quick access.

Less tangible problems of interpretation in these museums also concerned the branch and the seminar. Seminar participants understood that furnished historic structure museums have relatively complex messages to communicate to visitors. Interpretive shortcomings generally stemmed less from what the visitors saw than from the kind of help they received during their visits. Park interpreters tended to treat their museums as self-operating devices rather than interpretive tools for active use. In contrast, such successful interpretation as achieved at Colonial Williamsburg relied on active attendants in the furnished structures who received intensive and continual training in technique and subject matter. How could the Park Service attain comparable quality?

Factors of dispersion and variety of content precluded centralized courses of instruction at the Service's existing training centers. The seminar concluded that the best hope lay in centrally assisted efforts at the individual parks. Although no specific training initiative resulted, the branch later prepared for park staff members an extended discussion of what and how to interpret in a furnished historic structure museum. This constituted the fourth chapter in Part III of the *Museum Handbook* issued in February 1969. The chapter concluded with brief consideration of the possibility of treating exhibited historic structures differently.

The Museum Branch believed that furnishing a restored building as an exhibit should never become a stock solution for its preservation or use. After a 1959 regional curators' conference it developed a set of four criteria any decision to refurnish should meet. When a furnishing plan proposal for the Mount Washington Tavern at Fort Necessity National Battlefield called Vera Craig there in 1964, what she saw led her to recommend against a furnished historic structure museum. Instead the branch proposed that symbolic objects be displayed in the barroom and parlor to evoke characteristic activities of a stopover during a stagecoach journey along the National Road.[60] Speaking before the National and State Parks Section of the American Association of Museums in 1966, Nan Carson suggested that when communication of impressions and feelings rather than factual history is the goal, impressionistic stage settings might succeed better than detailed refurnishing. When Part III of the *Museum Handbook* was released in January 1968, the branch's criteria for refurnishing stood at the head of its first chapter.

In spite of the criteria and the encouragement of different approaches, furnished historic structure museums in Service custody continued to multiply. When Director George Hartzog abrogated the Service's handbooks in July 1969, the criteria published in the *Museum Handbook* lost effective status. Comparable authoritative criteria did not reappear until publication of the Service's *Management Policies* in 1978. Clearly aiming to limit the development of furnished structure museums, they insisted on significant relationship to a primary park theme, prior determination that furnishing would constitute the most effective interpretive approach, and enough historical evidence to achieve defensible accuracy. These criteria, directly applicable to the Branch of Historic Furnishings established at Harpers Ferry Center in 1978, remained in effect through and beyond the period of this study.

During 1978–82 this branch produced or received historic furnishing studies, reports, or plans for at least 32 projects. About half these documents concerned structures in development programs initiated before the 1978 policies, but they generally seemed in step with the fresh criteria. They aimed at accurate furnishing of additional interiors at Independence National Historical Park; Hubbell Trading Post, Fort Davis, Fort Larned, and Fort Scott national historic sites; and Grand Portage National Monument. Half the remaining plans and reports of 1978–82 addressed the furnishing of structures that seemed to meet the significance and interpretive criteria with little question, including Lincoln's home in Springfield, Dwight D. Eisenhower's at Gettysburg, William Howard Taft's in Cincinnati, Augustus Saint-Gaudens' home and studio, and John Muir's home. Application of the historical evidence criterion did reduce the extent of development in at least one case. A few projects of the period less clearly met the criteria, notably two small Hispanic houses at Castolon in Big Bend National Park, the Hornbeck Homestead at Florissant Fossil Beds National Monument, and settlers' houses at Cumberland Gap National Historical Park and Great Smoky Mountains National Park.

The furnishings curators recruited by David Wallace carried on ably in the spirit of the 1978 policies. Their knowledge and skill enabled them to achieve the standards of quality toward which the furnished historic structure program had striven since Ned Burns and Ronald Lee had first given it serious attention. The museums planned and developed by the Branch of Historic Furnishings steadily added to the wealth of collections under National Park Service care.

NOTES

1. Ralph H. Lewis, *Manual for Museums* (Washington: National Park Service, 1976), pp. 182-83.

2. Advocates of this broader preservation of the "built environment" sometimes went too far to disparage museum use of historic structures. The role of historic structure museums in the preservation movement through 1949 is ably told by Charles B. Hosmer, Jr., in *Presence of the Past* (New York: G. P. Putnam's Sons, 1965) and *Preservation Comes of Age* (Charlottesville: University Press of Virginia, 1980).

3. *Charter and By-Laws of the Washington Association of New Jersey* (Morristown: Vogt Brothers, 1899). See Morristown box, NPS History Collection.

4. *Historic House Museums* (Washington: American Association of Museums, 1933), pp. 20, 32.

5. U.S. Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year Ending June 30, 1918* (Washington: Government Printing Office, 1918), p. 49, hereinafter cited as *Report of the Director for (year)*; *Report of the Director for 1919*, p. 89; *Report of the Director for 1921*, pp. 273-74; *Report of the Director for 1922*, p. 156; Carl P. Russell Diary entries for late April and early May 1935, Richard W. Russell Personal Files.

6. Willis Peterson, "Pipe Spring National Monument, A Pioneer Heritage," *Arizona Highways* 33, no. 3 (March 1957).

7. Charles E. Hatch, Jr., *Chapters in the History of Popes Creek Plantation* (Washington: National Park Service, 1968), pp. 161-63; see also Chapter One.

8. Randall J. Biallas, "Evolution of Historic Structure Reports and Historic Preservation Guides of the U.S. National Park Service," *APT Bulletin* 14, no. 4 (1982): 7. Peterson had little regard for the ability of academically trained historians to dig out documentary information pertinent to structural problems in historic buildings; he preferred to rely on himself and his staff architects for such research.

9. Letter, Floyd Flickinger to Director, NPS, Sept. 8, 1937, Administrative Files, Colonial National Historical Park.

10. Letters, Floyd Flickinger to Director, NPS, Apr. 28, 1936, and Sept. 8, 1937, ibid.

11. Letter, Mrs. Julian G. Goodhue to Floyd Flickinger, Mar. 15, 1937, ibid.; letter, Flickinger to Goodhue, Apr. 6, 1937, ibid.; letter, Flickinger to Director, Apr. 9, 1937, ibid.; letter, Director to Flickinger, Apr. 17, 1937, ibid.; Hopkins, "A Suggestion for the Refurnishing of the Surrender Room of the Moore House" (report, undated), ibid.

12. Hopkins, "An Inventory to Date of the Furniture and Furnishings Contained within that Room Known as the Surrender Room in the Moore House, Yorktown, Virginia, and Presented by the National Society of the Daughters of the American Revolution to Colonial National Historical Park at a Dedication Ceremony Held within the House April 26, 1938," File 620-107, Colonial NHP.

13. Letter, Floyd Flickinger to Mrs. Gustavus Town Kirby, Sept. 3, 1937, Administrative Files, Colonial NHP; letter, Flickinger to Director, NPS, Sept. 8, 1937, ibid.; letter, Kirby to Flickinger, Dec. 8, 1937, ibid.; Hopkins, "A Suggestion for the Refurnishing of the Dining Room of the Moore House" (report), Nov. 17, 1937, ibid.; Coleman, *Historic House Museums*, p. 67.

14. Stanley W. McClure, *The Lincoln Museum and the House Where Lincoln Died* (Washington: National Park Service, 1960), p. 39; George J. Olszewski, *House Where Lincoln Died Furnishing Study*, Apr. 15, 1967, pp. 32-33, in National Capital Parks–Ford's Theatre box, NPS History Collection.

15. As remembered from visits in the late 1930s and 1940s, the death room achieved a reasonable approximation of the intended result. The front parlor was sparsely furnished around a sofa and chair Oldroyd had acquired in Lincoln's home at Springfield, Illinois. The back parlor, a tenant couple's bedroom in 1865, gave little impression of its everyday use or the critical activity centered in it during the assassination night.

16. Public Law 68-562, Mar. 4, 1925, U.S. *Statutes at Large* 43: 1356.

17. For example, visitors saw the large uncompleted room Custis used as a painting studio as a stately dining room with crystal chandelier. See also the bequest of furnishings from General William E. Horton reported in *Park Service Bulletin* 7, no. 9 (October 1937): 16.

18. Russell Diary, Feb. 6-7, 1935, Richard W. Russell Personal Files; letters, Russell to Betty Russell, Aug. 6 and Sept. 7, 1935, ibid.

19. *Park Service Bulletin* 6, no. 4 (May 1936): 4. The research apparently originated in the park.

20. Information sheet, undated but before August 1934, Jockey Hollow Exhibits folder, Morristown NHP box, NPS History Collection.

21. *Park Service Bulletin* 7, no. 6 (July 1937): 29, 32.

22. *Park Service Bulletin* 7, no. 2 (February 1937): 14; ibid. no. 3 (March 1937): 28.

23. Memorandum, Small to Chief, Eastern Office of Design and Construction, Aug. 23, 1954, Salem Maritime NHS box, NPS History Collection.

24. Memorandum, Director to All Field Offices, Nov. 1, 1939, Museum Survey of 1939-40 folder, Exhibit History 1939-40 box, NPS History Collection; "A Survey of National Park Service Museums," *Museum News* 19, no. 7 (Oct. 1, 1941): 10-12.

25. Ned J. Burns, *Field Manual for Museums* (Washington: National Park Service, 1941), pp. 255-69; memorandum, Director to Washington and All Field Offices, Mar. 13, 1940, Exhibit History 1939-40 box, NPS History Collection.

26. Vanderbilt Mansion box, NPS History Collection; Monthly Reports Museum Division box, ibid.

27. *Park Service Bulletin* 10, no. 5 (September-October 1940): 13.

28. *Park Service Bulletin* 10, no. 1 (January-February 1940): 28. Huth examined some furniture loaned to a museum by the White House and exhibited as pieces James Monroe had purchased from France. He found that it was manufactured in Philadelphia for James Buchanan. Privileged to have accompanied Huth on an inspection of White House public rooms, the writer recalls his deft identification of presumed antiques as later copies.

29. Stanley McClure continued the linkage of objects to their accession records. The application of catalog numbers was also essentially completed, and considerable progress was made on descriptive catalog entries. The effort was interrupted by the reconstruction of the White House interior. A later administration redecorated many of the rooms, secured legislation giving the Smithsonian Institution a share in curatorial management, and adopted cataloging procedures that largely ignored what had been accomplished.

30. Charles B. Hosmer, Jr., *Preservation Comes of Age* (Charlottesville: University Press of Virginia, 1980), pp. 795-806.

31. Eastern Museum Laboratory monthly reports, December 1946, February, June, Oct. 15-Nov. 15, 1947, Monthly Reports Museum Division box, NPS History Collection; Museum Branch monthly reports, February, April, August 1948, ibid.

32. Museum Branch monthly reports, December 1950 and January 1951, ibid. Burns liked to tell of one thing that particularly impressed him on his Winterthur visit. As he lunched with du Pont he could see close by a small group of silver tankards wrought by Paul Revere whose value far exceeded what he would earn in a lifetime.

33. The pieces included the famous "rising sun" chair occupied by George Washington while he presided over the Constitutional Convention. Preparator Frank Urban treated them, strengthening weakened members with the minimum of new material skillfully inserted.

34. *Administrative Manual*, vol. 25 (Information and Interpretation in the Field), ch. 6, sec. 3, p. 3; Exhibit History 1941-59 box, NPS History Collection.

35. "A Summary Report on the historical basis for the partial refurnishing of the Assembly Room, Independence Hall," Box 14, Archives Section RoE6, Independence NHP Library. The committee continued to function for the Independence Square buildings at least until the early 1960s. As the park's curatorial staff became clearly competent in furnishings, consultation with it became unnecessary and occasionally irksome.

36. Museum Branch monthly report, October 1954, Monthly Reports Museum Division box, NPS History Collection.

37. Memorandum, Director to Washington and All Field Offices, Mar. 13, 1940, Museum Policy binder, NPS History Collection; Burns, *Field Manual*, p. 257.

38. Memorandum, Lewis to Chief, Division of Interpretation, July 12, 1955, Andrew Johnson NHS binder, Vera Craig Files, Division of Historic Furnishings, HFC; memorandum, Director to Regional Director, Region One, Aug. 26, 1955, ibid.

39. Memorandum, Acting Chief, Division of Interpretation, to Director, ibid.

40. Memorandum, Superintendent, Andrew Johnson NM to Craig, Feb. 8, 1957, ibid.; memorandum, Superintendent to Director, June 12, 1957, ibid.; Museum Branch monthly reports, June and July 1957, February and November 1958, April 1960, Monthly Reports Museum Division box, NPS History Collection.

41. *Mount Locust Furnishing Plan*, Decorative Arts and Material Culture Collection, HFC Library.

42. Field Order 7-58, Acting Associate Director to All Field Offices, Arch. and Hist. Structures folder, Storage Box 111, NPS History Collection.

43. Schuyler House plan in Decorative Arts and Material Culture Collection, HFC Library; memorandum, Acting Chief, Branch of Museums, to Regional Director, Region One, Nov. 30, 1959, Branch of Museums Dailies 1954-62 box, NPS History Collection; Museum Branch monthly reports, February and September 1960, ibid.

44. Fort Laramie plans in Decorative Arts and Material Culture Collection, HFC Library. Johnson married Richard Ketcham, a Park Service engineer detailed to Fort Laramie, in December 1961 and returned with him to San Francisco in mid-1962. In later years she prepared several more excellent furnishing plans for the Service under contract.

45. Carson's plans ibid. Carson later served as regional curator and as a principal interpretive planner at the Denver Service Center. She married Don Rickey, a Park Service historian specializing in frontier military history.

46. The Winterthur Program offered by the Henry Francis du Pont Winterthur Museum and the University of Delaware provided graduate training in decorative arts scholarship and connoisseurship. The Museum Branch had been hesitant to recruit curators with this specialized training because of concern that their focus on artistic quality would conflict with Park Service objectives of historical accuracy and appropriateness.

47. Field Order 19-60, Acting Director to Washington Office and All Field Offices, Sept. 2, 1960, Interpretive Planning box, NPS History Collection.

48. Memorandum, Chief, Branch of Museums, to Chief Architect, July 20, 1961, Branch of Museums Dailies 1959-62 storage box, NPS History Collection.

49. *Museum Handbook*, Part III, p. 2; Lewis, *Manual for Museums*, p. 182.

50. Memorandum, Chief, Branch of Museums, to Regional Director, Western Region, Apr. 8, 1963, Branch of Museums/Museum Operations Dailies August 1962–December 1965 storage box, NPS History Collection; Diana R. Pardue, "Collection Preservation Guide, Yosemite National Park," March 1980, p. 42.

51. Memorandum, Acting Chief, Branch of Museums, to Regional Director, Region One, Oct. 10, 1960, Branch of Museums Dailies 1959-1962 storage box, NPS History Collection; memorandum, Chief, Branch of Museums, to Regional Director, Dec. 15, 1960, ibid.; memorandum, Acting Chief, Branch of Museums, to Regional Director, Jan. 24, 1961, ibid.; memorandum, Chief, Branch of Museums, to Regional Director, July 26, 1961, ibid.; memorandum, Chief, Branch of Museums, to Regional Director, Southeast Region, Mar. 17, 1964, Branch of Museums/Museum Operations Dailies August 1962–December 1966 storage box, NPS History Collection.

52. Although erected in the late 1700s and the oldest surviving structure in Harpers Ferry, the Harper House had significance to the park primarily as an example of rental housing at the eve of the Civil War. Its furnishings reflected its known occupancy at that time by an Irish immigrant grocer's family. This shocked some of its first visitors who came on a National Trust tour evidently expecting to see the 18th-century furnishings so popular with collectors.

53. Memorandum, Acting Assistant Director, Conservation, Interpretation, and Use, to Chairman, Long Range Requirements Task Force, Branch of Museums/Museum Operations Dailies August 1962–December 1966 storage box, NPS History Collection; Branch of Museum Operations Special Objectives for FY65, Aug. 11, 1964, ibid.; Report, Conference of Regional Museum Curators, Sept. 13-18, 1964, Regional Curators Conference 1964 folder, Curatorial Services Division files, Harpers Ferry.

54. Memorandum, Chief, Branch of Museum Operations, to Chief, Division of Museums, Jan. 15, 1973, NPS Archives Acc. No. 31 storage box, NPS History Collection.

55. Lewis, *Manual for Museums*, pp. 189-95.

56. Memorandum, Chief Curator, WASO, to Manager, HFC, Nov. 9, 1982, Furnishing Plans folder, Curatorial Services Division files, Harpers Ferry.

57. Memorandum, Acting Assistant Director, Conservation, Interpretation, and Use, to Chairman, Long Range Requirements Task Force, Feb. 8, 1963.

58. Historic House Museums (Inspections) binder, Vera Craig Files, Division of Historic Furnishings, HFC.

59. Memorandum, Chief, Branch of Museum Operations, to Chief, Division of Interpretation and Visitor Services, Nov. 14, 1966, enclosing seminar report, Branch of Museums/Museum Operations Dailies August 1962–December 1966 storage box, NPS History Collection.

60. Memorandum, Chief, Branch of Museum Operations, to Regional Director, Northeast Region, Nov. 19, 1964, Mt. Washington Tavern folder, Vera Craig Files, Division of Historic Furnishings, HFC; subsequent memoranda ibid. The proposal led to substantial modification of the park's initial scheme.

COLLECTIONS

The functions that characterize a museum normally center on acquiring, preserving, studying, exhibiting, and interpreting its collections. Collections thus constitute the heart of a museum. For national parks, museum collections often provide the only practicable means to preserve some of their important resources. Park collections also contain information essential to sound management decisions and contribute especially to accurate, effective interpretation. They consequently form a significant aspect of National Park Service curatorial history, although one that is hard to deal with as an entity because of their dispersion throughout the national park system, the great variety of objects they contain, and the sheer quantity involved.

Guidelines on the proper scope of collections for parks appeared almost from the beginning and underwent continual refinement. It was thought that such guidance would keep collections in focus and under control, but their growth outpaced efforts of the director's staff to keep track. The Museum Division and its successors tried repeatedly to obtain an accurate Service-wide picture to achieve accountability, justify appropriations, and develop sound programs for collection management and care. The survey of park museums undertaken in 1939–40 did well to count how many museums existed in the parks without attempting to quantify collections, although Ocmulgee National Monument reported that it had 1,138,290 cataloged archeological specimens. In 1959 the new regional curators estimated that the 135 parks maintaining collections had a total of 2,338,630 objects, but less than a third of the collections were fully cataloged. In 1964 the regional curators raised the estimated total to 2,838,021, which largely represented progress in cataloging. Data gathered by the Division of Museums in 1970 seemed to justify a new estimate of 3,000,000. In 1976 Special Assistant to the Director Jack Pound asked every park to submit an inventory of its museum collections, resulting in a surprising total of 9,701,959 specimens. The parks reported less than half of them cataloged, so the figures still failed to carry conviction.[1]

In 1961 the Southwest Archeological Center undertook an inventory of collections within its purview that significantly increased their practical accessibility. The first part of the inventory described the collections from 24 southwestern parks, pointing out their strengths and weaknesses, their approximate numbers of objects, and the state of the records accompanying them. It also evaluated their importance and potential use.[2] The second part contained similar information on other collections at the center. A third section grouped the collections under period and subject to facilitate scholarly reference. Archeologists, managers, and interpreters could make

efficient and profitable use of these collections thanks to the inventory. Unfortunately no other centers or parks developed comparable analytical guides.

Authorization of the National Catalog in 1977 turned the long groping for collection accountability into a sustained drive that soon passed beyond the scope of this study.[3] Work on the catalog revealed the collections to be much larger and growing faster than previously estimated. Although the problem proved bigger than anticipated, the proposed computerization of the National Catalog promised not only to establish accountability at last but also to enable effective access to the wealth of information the collections embody. In the meantime selected examples of individual collections may offer a useful, if sketchy, overview of the whole.

Natural Resource Collections

Park museums generally followed the common practice of dividing their collections conceptually into an exhibit series and a study series. In natural history collections the study series often took precedence. Parks created to preserve outstanding natural features already had in these features their prime exhibits. At the same time, park management required much detailed information about the biological and geological features it was responsible for preserving. This sufficiently justified the study series, although it served additional purposes. As a distinguished scientist warned one park superintendent, "observations on species without collections to back them (which other people may check and use) are worthless and frequently unreliable."[4] The natural resource study series at Great Smoky Mountains National Park, the subject of this remark, became one of the best examples of such collections.

Congress authorized establishment of Great Smoky Mountains in 1926, but the park had little staff or facilities until the Civilian Conservation Corps was inaugurated in 1933. Hundreds of enrollees were put to work building trails, roads, and other improvements. Such work needed guidance to minimize environmental damage, for which purpose the CCC complement included wildlife technicians. The field data they gathered helped shape the direction development projects took. Being schooled in the natural sciences, they generally understood the necessity and techniques of collecting specimens to ensure accurate identification and confirm other information.

Aaron J. Sharp's report for August 1934 illustrates the nature of their duties.[5] Sharp, a botanist on the faculty of the University of Tennessee, set up a temporary laboratory in a CCC building using equipment largely borrowed from the university. He spent long days afield studying various habitats in the park, taking notes on his observations, and collecting

specimens, which he carefully pressed, dried, mounted, and labeled. He made a practice of collecting each specimen in triplicate: one for the park, another for the university, and the third for exchange. His month of work supplied more than four hundred specimens still in the park collection. T. G. Harbison, a 72-year-old botanist from North Carolina and a recognized authority on southeastern trees, collaborated with Sharp and added more than a hundred specimens to the collection. Another University of Tennessee botanist, Henry Milliken Jennison, served as a park wildlife technician from 1935 to 1937. More than 2,200 specimens of vascular plants in the park collection record his work, as do his field notebooks, reports, and publications.

Other wildlife technicians were zoologists. Willis King, who served through much of the CCC program in the park, had a special interest in cold-blooded vertebrates. The scope of his work is illustrated by a preliminary checklist of the park's reptiles and amphibians, a scientific paper on two species of trout found in park streams, and the description of a new species of salamander.[6] King deposited the type specimens of this species in the United States National Museum and the Cincinnati Society of Natural History. (Placing type specimens in the National Museum for safety and accessibility rather than retaining them in park collections later became stated Service policy.) Well over a thousand specimens King collected remained in the park collection as verification of his observations.

When World War II terminated CCC operations, the collections made by the technicians became the responsibility of the park naturalist, Arthur Stupka. Stupka had earned bachelor's and master's degrees in zoology at Ohio State University, attended the Yosemite Field School, and begun work with the Park Service in 1932 as a naturalist at Acadia National Park. In 1935 Harold C. Bryant, assistant director for research and education, persuaded him to transfer to Great Smoky Mountains, where he would serve with distinction for a quarter of a century. Superintendent J. Ross Eakin, who did not believe the park was ready to attract and serve the public with interpretive programs, had not asked for a naturalist and gave Stupka unexpected instructions.[7] For the next three and a half years he studied intensively the area he would later interpret. With notebook and altimeter constantly at hand, he probed particularly how the animals and plants of the park related in distribution and life histories to the varied topography. He continued such observations during the ensuing years of active interpretation. His carefully organized field notes represented an especially valuable contribution to the study series.

Stupka did not engage extensively in field collecting himself, but he oversaw a staff of seasonal naturalists well qualified in the collection and preparation of scientific study specimens. They included mammalogists R. Van Dorp (1936) and E. R. Cady (1937) and botanists Henry Jennison

(1938, 1939) and Aaron Sharp (1940, 1941, 1942), who had returned to the University of Tennessee after serving in the park as wildlife technicians. Later Stupka selected some of his seasonal staff to combine such expertise with their primary duties as interpreters. Donald W. Pfitzer (1950), Clay L. Gifford (1957), and Hugh Bell Muller with R. M. Schiele (1959) strengthened the series of authoritatively determined birds and mammals. The naturalist staff also undoubtedly contributed much to collection care under Stupka's direction. Assistant park naturalist Henry Lix and others spent many hours in the late 1950s cataloging specimens to meet new Service standards.

Stupka had still another effective way to nurture the study collection: "One of the most important phases of my job was to influence competent scientists to come in and help us," he recalled.[8] He probably established closest relationships with the University of Tennessee, forty miles from park headquarters. In addition to the botanists already mentioned, L. R. Hesler continued studying the fungi of the park for at least fifty years. Royal E. Shanks, an ecologist, collaborated in sustained research on plants replacing the diseased chestnuts. Stanley A. Cain, later chairman of the Service's advisory board and assistant secretary of the interior, published several important ecological papers based on work in the park. A zoologist from the university, James T. Tanner, made an extended investigation of chickadees and juncos critical to understanding effects of the mountain topography. Scientists from other institutions such as botanist W. H. Camp and ecologist R. H. Whittaker found Stupka equally supportive. In most cases visiting scientists deposited in the park collection at least some specimens that documented their findings.[9] By 1960, when Stupka relinquished his duties as chief park naturalist, the natural history study series had become a resource of scientific importance.

Stupka passed on to his successors a herbarium that exceeded 6,000 mounted specimens of vascular plants as well as specimens of algae and other lower plants. The collection also contained about 375 mammal study skins and skulls with a few whole specimens preserved in fluid and some skeletal material. The study series included only 55 bird skins and about twenty whole specimens in fluid because the superintendent had asked that the collecting of birds be kept to a minimum. The reptile series comprised approximately three hundred snakes, 34 turtles, and 73 lizards, probably all preserved in fluid. The amphibian collection included more than 1,400 salamanders, 163 frogs, and 136 toads, all in fluid. Among invertebrate animals the series of pinned insects was growing toward a total of at least 10,000. Altogether the study series provided a significant record of the park's biota. Its value depended less on its size than on its highly localized provenance and the scientific data associated with the specimens. In general each specimen bore a label detailing where, when, and by whom collected;

the scientific name as identified by a recognized expert; and in many cases accurate measurements or other pertinent information. The geological component of the Great Smoky Mountains collection awaited cataloging.

Visiting scientists normally operated under permits that let them retain specimens at universities or other research centers more conveniently located for continued study. This made good sense if the park chose the depository institutions wisely, knew what specimens went where, and made sure they continued to receive proper care. The difficulties inherent in monitoring such arrangements, on the other hand, led the Service to issue cautionary instructions to all parks on keeping records and making checks on the collections deposited elsewhere. These admonitions in turn proved insufficient.[10]

Even providing for the specimens kept in the park posed problems. The wildlife technicians at Great Smoky Mountains began collecting before the park had any but makeshift storage facilities. A park headquarters building completed in 1940 included no museum provisions beyond a spacious lobby housing a large topographic model of the park and a few display cases. Arthur Stupka secured space in the attic to store the growing collection of natural history specimens. By no means ideal from an environmental standpoint, the attic at least kept the study series reasonably secure, and its proximity to the naturalist office downstairs enabled routine care and convenient use of the specimens. Twenty more years would elapse before the park got a building for its natural history museum with a proper collection storage area: the Sugarlands Visitor Center erected under Mission 66.[11]

Not all of Stupka's successors inherited his concern for the scientific study series. Ross Bender thought the space it occupied could better be used by his naturalist staff to print interpretive notices, fabricate temporary signs, and organize their campfire slide talks. Beginning in late 1967 much of it left the park on indefinite loan to several institutions. The fish collection, not yet cataloged, went to the University of North Carolina. Amphibians and reptiles were placed in the custody of Hiwassee College. The University of Tennessee received the bird skins and most of the mammal skins and skulls. A few of the mammal specimens were lent to Michigan Technical University and Tennessee Technical University. In the process Bender discarded as worthless bird and mammal specimens preserved in fluid as well as some skeletal material. When Arthur Allen inspected the museum in 1973 as assistant chief of the Branch of Museum Operations, he found the remaining herbarium and insect collection well cared for but staff members bemoaning to a degree the absence of the rest of the study series.[12]

In 1976 UNESCO recognized Great Smoky Mountains National Park as one of a world network of biosphere reserves. Under the Man and the

Biosphere Program the Park Service assumed an obligation to monitor its environmental conditions and ecological changes. Biosphere reserve status appeared to underline the importance of the existing collection and necessitate its growth as a basis for measuring change. About the same time, the Service's Southeast Region established the Uplands Field Research Laboratory at Great Smoky Mountains to support the biosphere program and address priority management problems. The laboratory staff, physically and philosophically discrete from the park's interpretive staff, represented a generation schooled in the creation and use of computerized data bases. Other aspects of research almost completely overshadowed the curation of collections.

The park's herpetological study specimens afford an example. Not long after Allen's 1973 visit to the museum an Uplands Laboratory staff member requested use of the herpetological collection lent to Hiwassee College. The park recalled it and assigned custody to the laboratory. When Allen revisited the park in 1982 with a curatorial team, they found this segment of the study series stowed in a damp section of the laboratory basement. "The collection of several hundred bottles was in horrible condition," Allen reported. "Mold was actually growing on the outside of the bottles! Many of the specimens were without preserving fluids." When the team learned that the laboratory was on the verge of throwing out the whole collection, it obtained a stop order. A year later Chief Curator Ann Hitchcock found the bottles still in the same substandard storage and urged their belated return to the park museum.[13]

The park reclaimed the herpetological collection and with help from the Service's natural history objects conservator restored the specimens insofar as possible. It also upgraded the collection storage area in the Sugarlands Visitor Center, increasing its capacity. In 1985 the park retrieved its bird, mammal, and fish collections. The Great Smoky Mountains scientific study series continued as an essentially irreplaceable asset documenting fifty years of research and undergirding the park's interpretation.

Grand Canyon National Park also has prime significance as a scientific resource, and its natural history study collection grew to importance accordingly. Because the canyon is preeminent as a geological exposure, rocks with their accompanying fossils and minerals took precedence in the park's scientific collecting. Acquisition of specimens began under the discerning eye of John C. Merriam, the paleontologist who oversaw the planning and development of the Yavapai Observation Station Museum beginning in 1926 (Chapter Two). As president of the Carnegie Institution in Washington, Merriam had a concurrent research program underway in the canyon involving three paleontologists. He entrusted the park naturalist, Edwin D. McKee, with much of the development work for the museum and guided him to a deep appreciation of the canyon's role in extending the

boundaries of scientific knowledge. Undoubtedly he encouraged McKee to adopt high standards in preparing, labeling, recording, and caring for study specimens, a legacy McKee passed on to his assistant and successor, Louis Schellbach.

The versatile Schellbach, assistant park naturalist from 1936 to 1941 and park naturalist from 1941 to 1957, brought considerable curatorial experience to the job. "Arguing that accurate interpretation depended upon sound and complete basic knowledge of park values, without favoritism for any one field, Louie collected, identified, recorded, preserved, and systematically stored an amazingly complete series of significant specimens of the rocks, plants, birds, mammals, insects, and historical items of the park," his staff supervisor in the regional office recalled.[14] Seasonal ranger naturalists, visiting scientists, and others no doubt broadened the collection. Its good preservation certainly benefited from the concern of Louise Hinchcliffe, park librarian, who helped with collection care during and long after Schellbach's tenure.

A curatorial management review in 1980 showed the extent to which Grand Canyon's study series had developed. Natural history study specimens then totaled more than 25,000, at least forty percent of which documented the park's geology. These included 7,700 fossils of prehistoric plants, invertebrate animals, and vertebrates and 3,900 rock specimens forming two sets, one representing lithology of the many exposed strata, the other concerning aspects of structural geology. About 675 mineral samples established their local occurrence. The herbarium contained an estimated 5,000 specimens. Perhaps 6,000 specimens sampled the insect population of the canyon with emphasis on more conspicuous species. Among the vertebrates about eight hundred specimens documented park birds. This section included study skins supplemented by a few skeletons and quite a number of nests. Mammals were represented by about 750 study skins and skulls along with a selection of horns, antlers, and a few mounted specimens. Some 325 snakes and lizards, 150 amphibians, and 100 fish preserved in fluid provided a good reference to the park's cold-blooded vertebrates. A register recorded visits to the study series by scientists from near and far; other records covered the loan of specimens to investigators engaged in sustained research.[15]

Among the many natural history study series in park museums, herbaria seem most common and most often consulted. For this Walter B. McDougall bears considerable credit. McDougall obtained his doctorate from the University of Michigan in 1913, taught for 16 years at the University of Illinois, where he produced the first American general textbook on plant ecology, and became a full professor at the University of Southern California in 1929. He spent the next several summers as a ranger-naturalist in Yellowstone, where he added to the herbarium started a few

years earlier by Henry S. Conard. He left the university to become a wildlife technician with the CCC, providing vegetational research and advice in a succession of parks. During the war he filled in at parks with depleted staffs, working then and later at Acadia, Big Bend, Grand Canyon, and Yellowstone national parks, Death Valley National Monument, and Natchez Trace Parkway.[16] In each he must have initiated or enriched the herbarium, developed checklists of the flora, and labored to increase public appreciation of park vegetation. After joining the scientific staff of the Museum of Northern Arizona in 1955, he wrote guides to the flora of Grand Canyon National Park and Montezuma Castle, Wupatki, and Sunset Crater national monuments that depended on herbarium specimens, many of which he would have collected and mounted himself.

National parks can point to other distinguished scientists who have contributed significantly to their herbaria. Frank C. Craighead, a forest entomologist by profession, worked diligently after retirement on the herbaria for Everglades and Virgin Islands national parks, for example. Numerous park herbaria have not only synoptic collections of the park flora but also series of voucher specimens documenting special research projects. Examples include sets of seedlings and sprouts collected in a fire ecology study for Everglades, an extensive series of slime mold specimens at Crater Lake National Park, and a thesis collection of mosses at Olympic National Park.

By 1982 the Service had received custody of seven national monuments established primarily to protect important concentrations of fossils.[17] On the heels of the paleontologists who discovered them, commercial collectors continued to quarry fossils for sale. Their activity and that of visitors seeking souvenirs threatened to destroy the considerable scientific values that remained. After commercial collectors began to dynamite petrified logs in Arizona Territory, Petrified Forest National Monument was created to protect them. Later a park museum provided facilities for a study series intended to represent all the species of Triassic trees found there. Comparative samples of petrified wood from elsewhere supplemented the main series, as did fossils of associated plants and animals from within the park.

Another paleontological area underlined the need for site protection. A small site in South Dakota held a deposit of well-preserved fossils that appeared transitional between ferns and the more highly evolved flowering plants. Paleobotanists collected and studied them with intense interest. In 1922 the area received protection as Fossil Cycad National Monument. Collection continued, and a 1938 park leaflet warned visitors that no fossils remained visible. "The edge of the frontal mesa of the Monument had yielded a fabulous burden . . . ," a scientist ruefully reported in 1944. "In all the collection that went to the State University of Iowa, the U.S.

National Museum and elsewhere aggregated many tons."[18] Congress abolished Fossil Cycad as a national monument in 1957 with the proviso that any fossils recovered from the site in future mining operations would still be federal property.

The principal concentration of fossils at Dinosaur National Monument occupied part of a steeply tilted lens of sandstone in an outcrop of the Morrison Formation. This lens, some 350–400 feet long by about 50 feet wide and barely 12 feet thick, had evidently been a sandbar laid down in a Jurassic river. Paleontologists from the Carnegie Museum of Natural History, having spotted a row of bones at the surface, began to quarry dinosaur fossils in 1909 under an Antiquities Act permit. During 13 years the museum removed fossilized parts of about three hundred dinosaurs and shipped them to Pittsburgh. In 1923 the U.S. National Museum worked the quarry to obtain the skeleton of a large dinosaur for exhibition. In 1924 the University of Utah dug out the bones of another species, also intended for display. The quarry had yielded fossil evidence of more than a dozen species, an exceptional proportion of skeletons complete enough to mount for exhibition, an unusual number of good skulls, and a relative abundance of immature individuals. From this wealth of material other museums enriched their collections for study or exhibit.[19]

After responsibility for Dinosaur National Monument's quarry reverted to the Park Service in 1924, a few paleontologists and Service officials dreamed of exposing and exhibiting in place some of the leftover dinosaur bones, but no one knew whether enough remained to make a worthwhile display. In 1953 the Service employed Theodore E. White, an experienced vertebrate paleontologist who had worked for the Smithsonian Institution and Harvard University, to find the answer. Erecting a temporary shelter over the quarry face, he led a small, skilled crew armed with power and hand tools to locate and uncover fossil remains without removing them. This meticulous labor soon proved that the sandstone lens still held enough fossils to justify exhibiting permanently in situ. The Service had a unique visitor center designed with 150 feet of the sloping quarry face forming one long wall. Two observation levels provided visitors fine views of the fossils and the workers painstakingly exposing them. Reliefing of the fossils continued as the building underwent construction in 1957–58 and through the years that followed.

By 1982, after 29 years of this process, the Service's quarry staff had uncovered and left in place some 2,200 fossils. While most were the remains of dinosaurs, they included several other kinds of reptiles and associated life forms that had shared the ancient valley. Although a quarter of the rock wall within the visitor center still awaited development, the exposed fossils constituted more than a striking and instructive exhibit. They formed a scientific study collection of at least equal significance.

Each specimen, identified and cataloged in place, preserved evidence not only of an individual organism but also of its association with an assemblage of other organisms and environmental factors.

The in-situ collection was supplemented by specimens kept in the collection storage area, with adjoining laboratory, provided as part of the visitor center. Sent here were individual specimens of particular significance that could not be studied adequately in place on the wall and others removed because they obscured more important specimens embedded beneath them. Fossils from other outcrops in the park, especially those jeopardized by erosion, would also be brought here. Finally, this supplemental study series contained casts of critical specimens from the quarry held by other museums and some fossils from earlier work at the quarry returned by museums no longer needing them.

Study collections grew in size and significance at other paleontological parks as well, their scope and rate of growth differing with the nature of the deposits. At John Day Fossil Beds National Monument, for example, most of the fossils occur in beds largely composed of volcanic ash. The outcropping surfaces of these beds form a protective crust when exposed to the air, but heavy rains break the crust and tend to wash it away along with some of the softer ash beneath it. This erosive process continually exposes fossils. Before they too are washed away, the park makes provision for paleontologists to collect and study them. In the process they become part of the scientific study series in the park's museum collection. The collection will need to grow at this gradual rate for the foreseeable future to preserve the park's prime resource.

Many natural history study collections represent the work of amateur scientists. Two donated private collections form the principal part of an important study series at Everglades National Park.

Colorful snails that lived in trees attracted the attention of early travelers to the tropical tip of Florida. In 1825 Thomas Say described and named the first species of these mollusks, but few collectors penetrated their haunts until railroad and highway construction increased the region's accessibility after 1900. Two aspects of these animals rekindled interest: they revealed a considerable range of color patterns, and the bearers of the patterned shells appeared to have quite limited distributions. Evident variation associated with restricted habitats raised evolutionary questions close to the mainstream of biological research.

In 1912 Henry A. Pilsbury of the Academy of Natural Sciences in Philadelphia recognized three species and 15 subspecies of the Florida tree snail. After other systematists had described more and more variations, Pilsbury decided in 1946 that they all belonged to one species that comprised eight subspecies divided in turn into 16 forms and 31 varieties. Professional and amateur scientists kept on collecting and describing color

variations until there were at least 58 recognized varieties. Shell collectors naturally hoped to obtain specimens of every known kind and to search for new ones. Collecting seriously diminished the supply of rarer forms, and destruction of the snails' habitats during southern Florida's booming development threatened their extinction.

In 1957 four amateur collectors obtained permission to transplant critically endangered varieties of tree snails to isolated tropical hardwood hammocks in Everglades National Park unoccupied by tree snail populations. One of the four, Florida sculptor Ralph H. Humes, donated part of his personal collection to the park in 1959. In describing the gift he referred to approximately 850 lots comprising some 4,000 shells collected over a 25-year period. "The Florida Liguus collection is fairly complete," he stated. "It is especially selected, comprising many paratypes and locotypes that are now extinct . . . each locotype has now become very important."[20] About 1965 Humes persuaded Richard Deckert, who had begun collecting *Liguus* in the 1920s, to donate his notable collection of some 12,000 specimens, also taxonomically rich in paratypes and locotypes. Another of the four amateurs, Archie Jones, published the descriptions of six new color forms of *Liguus* in 1979. Paratypes of these six forms, totaling 38 specimens, were donated to the Everglades collection and helped increase its coverage of types.

The study series of tree snails in the park museum had not been fully quantified at the time of this account. A 1972 inventory estimated 14,200 *Liguus* specimens, 2,000 of them representing rare varieties. In 1983 malacologist Ed Petuch estimated that they would fill 150–200 drawers in standard specimen cabinets. "The collection of *Liguus* tree snails represents an exceptionally valuable resource," he reported. "It is very likely the largest and most complete collection of these animals in the world. These specimens should remain in the Park museum since the animals are endemic to southern Florida."[21]

Cultural Resource Collections

Park museums preserve cultural collections of unquestionable importance. These contain a great variety of objects but share one characteristic: each collection relates to and enriches understanding of a place whose national significance has warranted its inclusion in the national park system. The core of each consists as a rule of the "historic objects" referred to in the 1916 act creating the National Park Service. Some of them are fixed features such as buildings, roads, and trails, but many more require the special protection provided by a museum collection. To their initial inheritance most parks have added other specimens obtained elsewhere to

help interpret the persons, events, or cultural aspects that justify or enhance national park status.

Cultural collections in park museums fit the traditional use categories of study series and exhibit series. Specimens and data acquired through archeological procedures document past research and provide the material basis for further research. Their prime function therefore lies in the study series, although individual objects may find important use in exhibits. Archival and manuscript collections also constitute study series as historical documentation and raw material for research. Selected specimens may be exhibited, but only temporarily as a rule because they are so vulnerable to damage from light. Together archeological and archival-manuscript materials add up to an estimated 92.5 percent of museum collections in Park Service custody.[22] Most of the remaining cultural objects serve principally in the exhibit series, both because of their value for interpretive purposes and because such material culture specimens have been subject to little academic research interest or support.

Archeology and ethnology collections both contain objects also studied in the field of history. The archeological component predominates, as noted above. During the period under review, Park Service practices in archeological collecting evolved with those of the archeological profession. Archeologists initially dug for artifacts to study and exhibit. As objectives and techniques developed, excavations aimed to extract and record as much information as the site could reveal. More and more data came from analysis of site features than from artifacts alone, meaning that excavation would destroy what was most important about a site. The Service therefore moved toward policies making excavation a last resort. Site surveys using nondestructive methods would take precedence, and surveyed sites would remain undisturbed until circumstances made excavation essential. Specimens recovered would undergo carefully restricted cleaning or repair to preserve any additional data discoverable from surface deposits, tool marks, signs of wear, or chemical and physical composition.[23]

The archeological collection at Mesa Verde National Park illustrates some of the steps in this development. The archeologists who first took specimens from the Mesa Verde ruins barely scratched the surface of the mesa's complex human story and unavoidably blurred the remaining evidence at the sites they probed. Amateur collectors who removed from the ruins whatever artifacts looked valuable with no understanding of their context did far more harm. The park, created to stem such destruction, lacked adequate means to do so until archeologist Jesse Nusbaum became superintendent in 1921 (Chapter One).

The museum Nusbaum launched began with few scientifically valid specimens. To remedy this lack John D. Rockefeller, Jr., donated enough money for Nusbaum to excavate a trash heap in a far corner of Spruce Tree

House during the winter of 1923–24. This small project brought the museum some significant objects backed by solid research data. With Rockefeller support the park continued such off-season ventures, excavating a Basketmaker site at Step House with good results in 1926 and reworking several previously dug sites over the next three years. Staff members managed to reassemble a considerable number of vessels from the pottery fragments they yielded. When construction projects threatened three unexamined sites at the end of the 1930s, the staff performed salvage archeology on them.[24]

The archeological collection grew faster after the war. A Gila Pueblo Archeological Foundation project under permit in 1947–48 enriched the park's holdings with artifacts and data from three more sites. Maintenance and development of park facilities required archeological salvage operations by the park staff in 1948, almost every year during the 1950s, and again in 1963 and 1964. During four summers in the mid-1950s also the University of Colorado's Department of Anthropology conducted an archeological field school that contributed specimens to the growing collection.[25]

Meanwhile, swelling numbers of park visitors threatened to wear out both the ruins featured in the park tour and the aging provisions for visitor access and accommodation. In response the Service adopted a plan designed to disperse visitors over a wider area of the park. Its key element involved opening to visitation several undeveloped ruins on Wetherill Mesa. A special Wetherill Mesa Archeological Project was organized in 1958 and during the next five years carried out intensive field work, including the excavation of three important cliff dwellings. The tens of thousands of documented specimens and the wealth of data from the project became part of the park's archeological collection. This accession in particular made the park museum one of the prime repositories of knowledge concerning the vanished inhabitants of these highlands and a basic source for future research.

The archeological collection at Ocmulgee National Monument illustrates a different growth pattern. When Smithsonian anthropologist Frank Setzler began excavating an Indian mound site in Louisiana in August 1933, administrators of the state's Depression relief program provided him with a hundred helpers. This example led the newly organized federal Civil Works Administration to suggest similar work-generating projects, especially in hard-hit southeastern states. Setzler had the Smithsonian propose eleven archeological sites that warranted excavation, and from December 15, 1933, to February 15, 1934, the short-lived CWA supported 1,500 laborers at them. Other emergency funding extended the work until April 15, when ten of the projects ended. The eleventh project, at Ocmulgee on the outskirts of Macon, Georgia, continued.

The Smithsonian had placed Harvard archeologist Arthur R. Kelly in charge there, and CWA had provided him with fifty skilled and 150 unskilled workers. Only 17 days after excavation of Ocmulgee's mounds started, the Park Service responded to strong local interest with the suggestion that the area become a national monument. Congress moved swiftly, authorizing the creation of Ocmulgee National Monument in June 1934. The Federal Emergency Relief Administration and the Works Progress Administration kept Kelly supplied with manpower. By 1936 enough land had been acquired to establish the park, and Kelly became a Service employee. In 1937 the CCC added some two hundred enrollees to his work force.[26]

Kelly's field work, aided by the largest crew engaged at any American site, demonstrated that Ocmulgee had been the scene of human occupancy for some 10,000 years. After the initial excavation phase ended in 1938, the project shifted to laboratory analysis and compilation of the data. The archeologists set up a laboratory in the Macon municipal auditorium, where they cataloged the million-plus specimens from the excavations assisted by three dozen clerical workers supplied by various relief agencies. The laboratory also cleaned and treated objects, analyzed pottery by types, and restored pots. Work continued until America entered World War II, by which time the specimens were moved to storage in the partially completed park museum building.[27] Ocmulgee National Monument thus obtained its basic collection through one exceptionally concentrated, amply staffed program of field and laboratory research.

Scientific excavations as at Ocmulgee and Mesa Verde produced most of the significant park archeological collections, but not all of them. Site surveys became an increasingly frequent source of specimens. In Grand Canyon National Park, for example, the resident archeologist spent several years in a systematic examination of the park terrain. While locating and mapping a large number of sites that revealed evidence of Indian occupancy, he collected, numbered, and recorded exposed samples of potsherds and other diagnostic specimens. Having bagged the specimens by site and packed the bags in boxes, he deposited them in the park museum.[28]

Christiansted National Historic Site illustrates still another type of archeological collection. The Folmer Andersen Collection, an estimated 15,000 or more artifacts left by the pre-Columbian inhabitants of St. Croix Island, was gathered by an acknowledged amateur as a hobby. Although most such assemblages lack scientific value because information about the specimens is too slight or uncertain, the circumstances surrounding this collection justified its acquisition. All the objects were found on the island, a limited area with definite boundaries. Andersen had combed much of it thoroughly and recorded the objects with considerable care, noting at least the approximate places where many were found.[29] When it received

custody of the collection, the Service installed it in the park museum at Christiansted. The choicest objects went on exhibit as a supplement to the central park story; the remainder were filed as a study series. Acceptance of the collection with a condition that it could not leave the island unfortunately impeded its professional study.

In contrast to the Service's abundant archeological collections, park museums preserve much less representing contemporary Native American groups. Two factors account for most of the Service's ethnographical collections. First, American Indians played substantial roles in the historic events commemorated by some national parklands, making related Indian artifacts appropriate interpretive media there. Second, park visitors have long shared a somewhat romantic interest in Indian life and material culture, prompting the collection of ethnographic materials not always related to primary park themes. The Indian baskets in the Yosemite Museum afford an early example (Chapter One).

Material culture specimens collected in the field by ethnologists have a wealth of associated data about their manufacture, use, and meaning that greatly enhances their scientific value. In contrast, ethnographic objects to satisfy interpretive purposes ordinarily came from private collectors or dealers in relics, who usually recorded little more than their source of an artifact and its tribal origin. Because of this and the absence of a strong Service ethnological research tradition, such materials in park museums have tended to receive more admiration than study. The display of ethnographic artifacts as art objects rather than aids to cognitive understanding bears out the observation of an astute curator at the Metropolitan Museum of Art: When a museum does not know enough about an object, it exhibits it aesthetically.[30]

Two collections that do not quite fit this pattern warrant mention. Agate Fossil Beds National Monument preserves several hundred fine objects of Sioux provenance. Chief Red Cloud gave these to his trusted friend and neighbor, the owner of the ranch containing the fossil beds, whose family passed them on to the Park Service. The patriarchal home and store at Hubbell Trading Post National Historic Site also came to the Service with numerous choice objects characteristic of nearby tribes. Four other examples illustrate the general quality and character of park ethnographical collections.

Mesa Verde National Park acquired a notable collection of this kind from Mary Elizabeth Jane Colter. Colter's career as an architectural and interior designer for the Fred Harvey Company and the Santa Fe Railway in the Southwest gave her unusual qualifications and opportunities as a collector and brought her into contact with Park Service staff. In 1945 she wrote the Mesa Verde park naturalist of her intention to bequeath to the park her outstanding collection of Indian jewelry. Two years later, when

she sold her home near Los Angeles in preparation for retirement, she sent her fine collection of Indian pots and baskets to Mesa Verde. She had owned the 36 pots, which well represented most Hopi types and their principal makers, for more than forty years and knew the date and place of each acquisition.[31]

In 1952 the Laboratory of Anthropology in Santa Fe staged a special exhibition of Colter's Indian jewelry collection. After the exhibition Don Watson, park naturalist at Mesa Verde, helped her catalog and expand it. During 1956 and 1957 she turned parts of the collection over to the park. Upon her death in 1958, her bequest completed the donation. The 530 objects covered by the bequest were not to be treated as a "collection," she firmly stated, but should "be displayed to emphasize the culture . . . of the Indians of the Southwest, from prehistoric times to the most modern developments."[32] They continue to constitute nearly half Mesa Verde's ethnographical specimens.

A quite different sort of ethnographical collection enriched the museum at Pipestone National Monument. In this case ethnological significance justified the monument's establishment. Generations of Indians of numerous tribes had come here to quarry the fine-grained red rock, called catlinite, to make ceremonial smoking pipes. When the park museum opened in 1958, the collection lacked an adequate representation of these key specimens. Six years later the Pipestone Indian Shrine Association, the park's cooperating association, purchased the Butts Collection of pipes from a dealer in Indian relics and donated it to the Service. This action brought the museum about 75 specimens.[33]

The dealer characterized the Butts Collection as "the largest collection of catlinite pipes I have ever encountered and the finest."[34] In fact, not all the pipes Edward Butts had collected were of catlinite. Spanning the continent in provenance, they ranged from prehistoric examples dug out of ancient mounds to steel pipe tomahawks supplied by fur traders. The array considerably stretched the proper scope of park interpretation. Like many private collections, moreover, this one lacked thorough documentation. The dealer supplied what information he could, including some helpful old labels, but many of Butts' attributions to famous chiefs and other specific individuals could not be confirmed.

The scope of collections statement for Nez Perce National Historical Park emphasizes preservation for study and interpretation of objects illustrating all aspects of Nez Perce culture. The core of the existing collection, nearly two hundred specimens of traditional apparel and equipment, came directly from the tribe when the park was authorized in 1965. Several subsequent gifts and loans increased the size of the ethnological collection to more than 3,000 items. In 1967 the Washington State University Museum lent the Lucullus V. McWhorter Collection of about

ninety specimens representing the 1877 Nez Perce War and the tribe's way of life. The Ohio Historical Society loaned about 25 objects collected by Henry H. Spalding, missionary to the Nez Perce, in 1836–45. A dozen more good Nez Perce objects came to the park on loan from the Idaho State Historical Society. The Field Museum of Natural History in Chicago lent a few objects illustrating Nez Perce fishing technology. Much of the borrowed material served initially to enrich the park museum exhibits and was returned when no longer needed for this purpose.

A final example of ethnography in park museums is found at Grand Teton National Park. The park's significance lies primarily in its natural resources, with its historic human occupancy a secondary interpretive theme. The acquisition of an ethnographical collection whose scope transcends park boundaries, contrary to normal Park Service museum practice, bears witness to the importance of the Vernon Collection.

David T. Vernon, a commercial artist, was a well-informed, discriminating collector of Indian artifacts to whom museums turned when seeking outstanding specimens. Late in life he sold his collection to Jackson Hole Preserve, Inc., the non-profit organization headed by Laurance S. Rockefeller that channeled Rockefeller family support to the national parks. The corporation deposited the collection temporarily in the Museum of the American Indian in New York, which provided safe storage and curatorial care, expert cataloging, and a division of the specimens into four categories. The finest were to be exhibited at Jackson Hole. The museum would retain a selection of the second best. Items more useful for study than display would constitute a third group, and what remained might become available for preservation elsewhere.[35]

In 1967 Laurance Rockefeller proposed that the Park Service accept the Vernon Collection as a five-year loan from Jackson Hole Preserve and exhibit it at Grand Teton National Park. The Service accordingly set out to remodel and enlarge the Colter Bay Visitor Center for the purpose. Retaining only the second category items, the Museum of the American Indian shipped the collection to Harpers Ferry, where the Branch of Museum Operations took over its curatorial care. Staff members unpacked, photographed, and carefully repacked for safe storage some 1,400 artifacts. With outside help the Service designed an exhibition that would serve the lender's desire to foster appreciation of the aesthetic quality of Native American material culture.

The Colter Bay museum opened in June 1972 with more than half the collection on attractive display. Jackson Hole Preserve extended the loan five more years, and the Service made important improvements in environmental conditions, security, and refinement of the exhibits at the museum. In December 1976 the corporation transferred ownership of the Vernon Collection to the Service as a gift. The specimens retained at

Harpers Ferry were sent to the park, where the entire collection remains for ethnological study and interpretation.

All other cultural resource collections in the parks fall under the broad category of history. They include archival and manuscript collections, works of art, firearms, historic furnishings, maritime artifacts, and a few individual items treasured for their symbolic importance.

First in numbers and very likely in research potential are the specimens obtained from historical archeology, as at Colonial National Historical Park. Jean (Pinky) Harrington's pioneering excavations at Jamestown established the nucleus of this distinguished collection (Chapter One). Before World War II interrupted his field work, the park obtained from his digs by far the most material evidence then available of the 17th-century English colonies in America. The virtually empty fields where Jamestown had stood continued to yield many artifacts and vital information after the war. In 1948–49 Harrington explored the outlying area where the colonists had manufactured glass in 1608, thoroughly documenting the unrecorded technical aspects of the enterprise.[36] On the townsite itself archeologists John L. Cotter and Joel Shiner expanded the earlier investigations, spurred on by the approaching 350th anniversary. Louis R. Caywood, another Service archeologist, was called in to excavate additional critical areas. When field research gave way to interpretive development in 1956, many thousands of specimens from recent projects swelled the Jamestown collection.

During and after the Jamestown research, similar problems required archeological study in the Yorktown section of the park. Before World War II reconstruction of earthworks from the Revolutionary siege and several 18th-century Yorktown buildings involved in park development demanded archeological investigation. Impressive quantities of military and civilian artifacts resulted. After the war C. Malcolm Watkins, a Smithsonian curator, and Ivor Noel Hume, Colonial Williamsburg's archeologist, collaborated to relate some of the pottery fragments to a significant aspect of colonial economics and administration. Coincidental with publication of their conclusions in 1967, accidental discovery of an 18th-century waste pit threw new light on the same problem. The discovery led to five years of excavation and subsequent years of study while increasing the Yorktown segment of Colonial National Historical Park's vast archeological collection by an estimated quarter-million specimens.[37]

This was not the only park that had to preserve and interpret historic sites where little or no physical evidence remained above ground. Fort Vancouver, western base for the Canadian and British fur trade, burned to the ground in 1866. When the land it occupied came under consideration for park status in 1947, Louis Caywood began exploratory excavation to confirm its exact location. Several weeks of work enabled him to determine

the four corners of the stockade, find remnants of stockade posts along the side facing the Columbia River, and discover the foundations of the powder magazine. During further digging in 1948, 1950, and 1952 he had time to examine only a fraction of the site but located forty structures and recovered an "almost unbelievable quantity of historic objects."[38]

From 1960 through 1974 Julia Butler Hansen represented the district containing Fort Vancouver in Congress. Upon her ascent to the chairmanship of the House subcommittee responsible for Park Service appropriations in 1970, her interest in the fort was translated into dollars for reconstructing its stockade and principal buildings. Intensive excavation for the purpose resumed under John J. Hoffman from 1970 to 1974, uncovering great numbers of artifacts left by the fort's occupants. The sheer volume of specimens and data created concomitant curatorial problems, reinforcing theoretical concerns that tended to postpone massive site excavation projects not driven by political pressure.[39]

Fuller recognition that continual refinement of recovery and analysis techniques promised even more fruitful results from sites left to future archeologists influenced policy. "All archeological resources within park areas should be treated with utmost care and concern," the Service's *Cultural Resources Management Guideline* of 1981 stated. "It must be remembered that these are irreplaceable resources which cannot be duplicated elsewhere, and that the park is a sanctuary for the protection of these archeological sites."[40] Archeological surveys triggered by proposed development became the principal focus of park archeological programs, followed by the careful recovery of data including artifacts whenever park development or maintenance threatened the archeological context of historic or prehistoric sites. This resulted in significant additions to park collections.

Independence National Historical Park offers one example. In defining its scope of collections the park cites data recovery excavations within Independence Square, Franklin Court, Carpenters' Court, and other feature areas. These yielded an estimated quarter-million artifacts, which the park preserved in special archeological storage and study space at Franklin Court. Later salvage excavations in Area F resulted in approximately 250,000 more specimens, which remained in the care of Temple University until the park could provide satisfactory facilities for their safe and accessible storage. The continuing need to recover evidence threatened by development and maintenance activities means that practically every park has a growing collection of this kind. Although few are as large as those at Independence, they preserve in the aggregate much important documentation and form a considerable resource for future research.

A second group of historical collections primarily for study consists of archives and manuscripts. The Park Service as a rule approached the

collection of archival and manuscript materials with cautious restraint. According to the *Museum Handbook*: "Manuscripts and historic photographs are especially important specimens for an historical study series when they clearly relate to the park story. Large collections of manuscripts and photographs, however, require special facilities and staffing for their preservation and proper utilization. These provisions are beyond the proper functions of the Service. Therefore, extensive manuscript and photographic collections will normally be deposited in archives or libraries outside the park."[41]

When the Adams Memorial Society donated the Old House with its furnishings, outbuildings, and grounds in 1946 to become Adams National Historic Site, the Service was properly content to have the magnificent collection of Adams papers in the Massachusetts Historical Society. This institution possessed the facilities and staffing needed for their care and use, as the scholarly editing and publication of the papers attest. Similarly, Saint-Gaudens National Historic Site took over the house, studios, and gardens at Aspet from the Trustees of Saint-Gaudens Memorial but concurred in the trustees' gift of the family papers to the Dartmouth College Libraries. The park's museum accession policy calls for transferring any gifts of manuscripts relating to Saint-Gaudens to Dartmouth. In 1970 members of the Hubbell family gave the Service an important archival and manuscript collection relating directly to Hubbell Trading Post National Historic Site. The Service deposited the collection on loan in the University of Arizona Library under an agreement calling for the library to conserve, catalog, and classify the collection and to provide for its use in research.

Rarely a Park Service historian let his appreciation of original documents overweigh policy. A great friend of Morristown National Historical Park, Lloyd W. Smith, collected manuscripts related to family genealogy, New Jersey history, George Washington, and the Revolution. Upon his death in 1955 his collection filled 140 boxes and 111 bound volumes. He planned to bequeath it to Princeton University, but Superintendent Francis Ronalds, a historian, persuaded him to leave it to the park instead. To change Smith's mind Ronalds agreed to accept as well his collection of Indian artifacts, which were of New Jersey provenance but lacked scientific documentation and had no relation to the park's theme. Smith's will made the bequest contingent upon the construction of facilities to house and display his collections properly. The Service acquiesced to the costly conditions, and Congress appropriated funds to build a library wing for the park museum. The park hired a librarian to care for the manuscript collection and took additional steps to preserve the manuscripts and make them accessible to scholars.[42]

Ronalds also represented the Service in negotiations leading to establishment of Edison National Historic Site, which would come under

Morristown's superintendency. Within the precincts of Edison's laboratory lay an archival vault containing an estimated three and a half million items, mostly business records including some 3,400 laboratory notebooks documenting experimental work. Although significantly related to the park story, these papers might well have gone to an institution particularly qualified to manage them.[43] In his negotiations with the Edison family, however, Ronalds readily accepted the transfer of the vault and its contents to the Service.

The Service's involvement with archives remained somewhat tentative, as indicated by the act establishing Frederick Law Olmsted National Historic Site in 1979. Most of the Olmsted manuscripts had been acquired previously by the Library of Congress, but the site still held many thousands of photographs and plans documenting the historic Olmsted contribution to landscape architecture. The legislation authorized the Service to "enter into a cooperative agreement with an appropriate entity for the management of the archival collection."[44] Although major conservation problems were involved, the Service elected to exercise full responsibility for these historic records. A few years later, beyond the time limits of this study, the Service reconsidered its policy on archival and manuscript collections and issued new guidelines for their acquisition under specified conditions.[45]

Paintings, prints, drawings, and sculpture are usually treated by museums as works of art, but the Service's legal mandates cause it to view them from a historical standpoint. They constitute more than a minor segment of numerous park collections. When the Smithsonian's National Collection of Fine Arts (now National Museum of American Art) undertook a nationwide inventory of American paintings as a Bicentennial project, David Wallace spearheaded a thorough effort to report the ones in park museums. The resulting inventory recorded 2,763 oil paintings, watercolors, and pastels in Service custody.[46]

Among the paintings, the portraits at Independence National Historical Park take pride of place. About 1781 Charles Willson Peale began to paint the military and civilian leaders of the new nation. He spent much of 27 years creating more than two hundred portraits. His brother and a son, also artists, added to the total. Peale exhibited the pictures as part of his museum in Philadelphia, housed for a time in Independence Hall. When his grandson had to sell the collection in 1854, the city acquired 106 of the portraits. The number of pictures in the city's collection ultimately rose well above 350, including 46 pastels by James Sharples, Sr., and members of his family who worked in America in the late 18th and early 19th centuries.[47] Although Philadelphia still holds title to almost all the paintings in this remarkable historical record, it entrusted them to the Park Service upon establishment of the national historical park. Peale's and the

city's hopes seem well fulfilled in the portrait gallery that now occupies the notable historic building originally erected for the Second Bank of the United States.

Painters also had a role in the national park movement. Early in his career Thomas Moran joined the 1871 Hayden expedition to the Yellowstone country and made numerous watercolor sketches in the field. Returning home, he executed *The Grand Canyon of the Yellowstone*. Congress bought the large painting for $10,000 and hung it in the Capitol after making Yellowstone the first national park. In 1873 Moran traveled to the Colorado River region with the Powell Survey, which approached Grand Canyon through the area that would later become Zion National Park. From field sketches he painted the equally large *Chasm of the Colorado*, which Congress purchased for the same price and hung also in the Capitol. Later expeditions familiarized Moran with the Grand Tetons and Yosemite. He continued to paint western scenes, some 125 in all, that became widely distributed and reproduced. One student has argued that "the most famous of the western national parks owe their existence in a large part to the attention focused on these areas by the works of Thomas Moran," although this may exaggerate his influence.[48]

Not surprisingly, park collections contain examples from Moran's brush. Yellowstone has 22 of his watercolors and one oil. In the late 1920s Director Mather and two of his friends bought and donated 16 of the watercolors—field sketches the artist had made in his earliest Yellowstone visits. In 1935 Ruth B. Moran, the artist's daughter, gave the Service more than three hundred items as The Thomas Moran Art Collection of the National Parks. The gift included pencil, pen-and-ink, and watercolor sketches, etchings, lithographs, and equipment Moran had used in the field. The Service has since placed these in the appropriate park collections. In 1953 executors for the estate of Charles R. Morley of Ohio informed the Service that Morley had bequeathed ten Moran paintings to Yosemite.[49] Because only one of the paintings pertained to that park, the executors allowed the Service to distribute the others elsewhere.

Other artists found Yosemite strongly attractive. Thomas Hill, an English-born landscapist, settled in California soon after it became a state and set up a studio in Yosemite Valley. The park's collection includes 15 of his paintings. Another California artist, Christian Jorgensen, first visited the park in 1899. He soon built a home and studio beside the Merced River in the heart of the valley and continued working there for about twenty years. Jorgensen's widow bequeathed a large number of his oil and watercolor paintings to the Yosemite Museum in 1936. The park retained 63 of particular interest and gave the rest—twenty oils and 69 watercolors mostly depicting California scenes outside the national parks—to the

Western Museum Laboratory. In 1958 the Service deposited these on loan to the Archives of California Art in the Oakland Museum.[50]

William Henry Jackson contributed significantly to the visual images that awoke appreciation of America's western scenic treasures during the late 19th century, but as a photographer rather than a painter. He served as official photographer on the 1871 Hayden Yellowstone expedition and on later Hayden surveys. Mostly during the 1930s while he was in his late eighties and nineties, he drew on his vivid recollections, reinforced by field sketches he had made decades earlier, for a series of watercolors depicting the Oregon Trail. As a young Civil War veteran he had driven freight wagons over the trail, so his paintings revealed authentic details about which younger artists could only guess. The American Pioneer Trails Association reproduced 31 of the watercolors for *Westward America*, published in 1942—the year Jackson died at the age of 99. Five years later the association donated to the Park Service these and more than fifty additional Jackson paintings, together with funds to construct a William H. Jackson Wing for the park museum at Scotts Bluff National Monument.[51] There were exhibited the paintings best illustrating the Oregon Trail, on which Scotts Bluff was a prominent landmark.

Painting collections illustrating the interests and tastes of notable people came to the Park Service among the historic furnishings of homes preserved as house museums. Adams National Historic Site has 61 paintings, including works by John Singleton Copley, Chester Harding, William Morris Hunt, Charles Bird King, Charles Willson Peale, and Edward Savage. The Home of Franklin D. Roosevelt National Historic Site reported 102 paintings to the National Collection of Fine Arts inventory, among them the naval scenes that Roosevelt collected and works by Thomas Birch, Henry Inman, Eastman Johnson, Gilbert Stuart, and Thomas Sully. The Hubbell family transferred 84 paintings that hung in their enclave at Hubbell Trading Post National Historic Site. Reflecting the artistic heritage of the Southwest, this collection contains paintings of and by Indians and ones by Elbridge Burbank, Maynard Dixon, William R. Leigh, and Orozco.

Quite another class of historic objects—firearms—tended to come to park museums in collection lots. Military history became a subject of special importance to park museums with the Service's acquisition of Yorktown Battlefield in 1930 and Morristown and more than twenty War Department battle sites in 1933. Because firearms collections seemed pertinent to these areas, four such accessions occurred before the museum program set adequate guidelines for them.

The highly regarded E. Berkley Bowie Firearms Collection in Baltimore contained more than four hundred items, mostly military shoulder arms. The Society of the War of 1812 in Maryland obtained this collection and donated it to Fort McHenry National Monument and Historic

Shrine, where the Service would preserve and exhibit it. Hardly half a dozen of the shoulder arms in fact dated from the fort's primary period of national significance. Carl Russell was sent to help during the donation process, but his task consisted primarily in getting the guns on display in the fort quickly. The park did its best for more than forty years to comply with the conditions of the gift, keeping about half the specimens on exhibit in one of the fort's barracks and the rest at hand in study storage, but environmental conditions at the edge of tidewater made curatorial care especially burdensome. Finally in the late 1970s the park renegotiated terms of the donation and installed the specimens as a study series in the greater security and controlled environment of its newly adapted museum storage facility.[52]

The Stephen C. Wolcott Collection consisted of some 118 guns ranging in date from the 18th century to post-World War I. Alfred Hopkins, curator at Colonial National Historical Park, was interested in weapons and probably persuaded the historical society of Gloucester County, Virginia, to give the collection to the park in 1937.[53] The park selected the fraction of the collection that fitted its limited scope and transferred the numerous remaining arms to the new Eastern Museum Laboratory in Washington. There they created a persistent storage problem but doubtless helped engender the eventual development of the Service's museum clearinghouse.

Another arms collection acquired in 1937 did not relate to the interpretive needs of military sites. Arthur I. Kendall, professor emeritus at Northwestern University Medical School, was interested in the folk culture of the southern Appalachians and the manufacture of hunting rifles by local gunsmiths. He gathered examples of their rifles and homemade tools and donated the small but highly relevant collection to Great Smoky Mountains National Park. The Service supplemented the gift by publishing his well-illustrated description of the craft.[54]

The fourth firearms collection obtained in the 1930s resembled the first two in being large and military, but its narrower scope better fitted the needs of the park concerned, and it came as a loan rather than a gift. Because Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park lacked specimens for its museum on the Fredericksburg battlefield, the Fredericksburg City Council purchased R. W. Johnson's collection of about 185 Civil War weapons and lent it to the park in 1939.[55] The guns remained on exhibition there for more than thirty years. Eventually new interpretive facilities became necessary, causing the park to return the collection to the city in 1973.

By the 1950s the Service's accession policies emphasized keeping within sharply defined scopes and its military parks sought examples of particular arms rather than whole collections. Acceptance in 1954 of the Claud E. and Zenada O. Fuller Collection marked a carefully considered

exception. Fuller pioneered in intensive study of both specimens and documents to trace in detail the development of American military shoulder arms. He sought to gather key examples representing each advance and modification, obtaining when possible pattern weapons on which armories had based production. His scholarly studies culminated in a collection that Harold Peterson described as the "finest and most complete . . . in the world" for its special field. As donated to the Service, it contained at least 320 shoulder arms supplemented by nearly a hundred separate lock plates and other gun parts, about fifty bayonets, cartridges and associated equipment, and Fuller's voluminous notes. In scope it outreached any single military park in the system, but its potential value in setting standards and undergirding accurate interpretation in all the parks of this category justified its acceptance. Locating it in a new wing of the Chickamauga Battlefield museum at Chickamauga and Chattanooga National Military Park complied with the donor's wishes.[56]

Following authorization in 1974 of Springfield Armory National Historic Site, the Park Service received yet another arms collection paralleling Fuller's in scope and far exceeding it in size. From its founding in 1794 until its termination in 1968 the United States armory at Springfield, Massachusetts, was a principal center for the design, development, and production of infantry weapons. About 1870 the armory began a study collection originally aimed to include an example of every military shoulder arm used by the world's armies. This collection along with many stands of Springfield rifles occupied the main arsenal building when the armory closed. The Department of the Army agreed to lend the collection to a local organization formed to operate the arsenal building as a museum. This group borrowed an additional arms collection from Tufts University and some material from private collectors. When its means proved unequal to the task, establishment of the national historic site provided an alternative solution.

The collection was estimated to contain about 6,200 shoulder arms, 1,600 handguns, 825 crew-operated guns, and 1,500 edged weapons when title to the arsenal and other portions of the site passed to the Service in 1977. Years of overcrowding and insufficient care had left specimens in much need of curatorial and conservation work. New loan agreements with the Army and Tufts in 1978 facilitated setting guidelines for collection management. Then the long process of inventorying, cataloging, treating, storage provision, and exhibit planning gained momentum.[57] The firearms preserved at Springfield Armory National Historic Site will doubtless assume first place in significance as well as size among park museum collections of this subcategory.

The furnishings of furnished historic structure museums compose more numerous and varied collections. There are nearly two hundred such

museums in the national parks, and the Service has aimed to make each of their collections an accurate record of the physical environment of specific persons, events, or circumstances. A furnishings collection consists of all the objects, or surrogates for them, that thorough research has determined were in the exhibited space at the time of its historically significant use. This requirement has two corollaries.

First, it makes these collections exceptionally varied in content. Spanning more than 250 years of American history, furnished structure museums include homes, schools, churches, commercial and industrial enterprises, professional offices, legislative chambers, military posts, and more. The collections thus preserve an especially broad spectrum of American material culture. Second, because many of the objects actually used by the historic occupants of the structures are no longer available, they must be replaced with examples of the same kind. The collections range from those retaining essentially all the original furnishings of a building to those largely of specimens substituting for the originals. Most substitutes date from the period and cultural context of the historic occupants while resembling the missing pieces as closely as possible; others are reproductions faithfully copied from unobtainable originals or from carefully selected prototypes. Wherever a collection lies in this continuum, it possesses the scholarly integrity with which documented research has endowed it.

Furnishings of the Old House at Adams National Historic Site well illustrate one end of the spectrum. Members of the eminent Adams family occupied the house for 139 years, from 1788 when John and Abigail returned from diplomatic missions abroad until 1927 when their great-grandson Brooks Adams died. The Adamses brought home cherished pieces from their posts in Boston, Washington, London, Paris, The Hague, Berlin, and St. Petersburg, and their wives contributed favorite furniture from their family homes. Each succeeding generation left its mark on the furnishings while holding in respect what it had inherited. The family's Adams Memorial Society kept the house and its contents just as Brooks left them for nearly twenty years, then donated house, grounds, and furnishings in 1946 to the Park Service. The furnishings comprise some 9,500 cataloged items, all used in the house by family members. Origins and associations of most items are matters of record.[58]

Several other Park Service furnished historic structure museums have all or most of the authentic furnishings in place. The 7,700 cataloged items at Home of Franklin D. Roosevelt National Historic Site were all part of the original property donation. A substantial proportion of the 6,600 objects at Sagamore Hill National Historic Site were used there by Theodore Roosevelt and his family. Virtually all the furnishings at Longfellow National Historic Site, the poet's home for 45 years, came to the Service

with the house from the Longfellow Trust. Nearly all the 38,000 cataloged documents, furniture, and accessories at Carl Sandburg Home National Historic Site occupied the farmhouse where Sandburg spent the last 22 years of his life. Furnishings at Hubbell Trading Post National Historic Site, Thomas Edison's home and much of his laboratory at Edison National Historic Site, the ranch house at Lyndon B. Johnson National Historical Park, Saint-Gaudens National Historic Site, and Vanderbilt Mansion National Historic Site match these examples in authenticity.

At the other end of the spectrum stand furnishings collections consisting principally of reproductions. At Independence National Historical Park, the desks and chairs used by the U.S. Senate and House of Representatives from 1790 to 1800 had largely disappeared during the century and a half before the Service restored Congress Hall. A fraction of the chairs remained in the Independence Hall collection under a mistaken belief that they came from the Assembly Room. Following exhaustive research, the park had the balance of the chairs and the curving rows of desks painstakingly reproduced.[59] For barracks at Fort Davis and Fort Larned national historic sites, the Service reproduced multiple furnishings of the correct issue too numerous to obtain as originals. In the surrender room of the reconstructed McLean House at Appomattox Court House National Historical Park, reproductions replaced originals unobtainable from the collections of other museums.

Most Park Service furnishings collections lie somewhere between these extremes. The Assembly Room in Independence Hall illustrates the studied combination of originals, comparable period pieces, and reproductions. A few items in the collection saw use in the room during the Continental Congress or the Constitutional Convention. Appropriate 18th-century furniture, some of it made by the same craftsman who supplied the originals, provides much of the rest. The park had the remaining needed items faithfully copied from selected period specimens. A furnishing plan documents the years of expert research by historians and curators that supports the accuracy of this composite.[60] Other noteworthy collections of this sort include those of Arlington House, The Robert E. Lee Memorial; the refurnished structures at Fort Laramie National Historic Site; and the 1851–75 home of Andrew Johnson at Andrew Johnson National Historic Site.

The many parks on America's seashores and lakeshores have caused elements of maritime history and technology to be widely represented in Service museum collections. The Sawtelle Collection in the Islesford Museum at Acadia National Park largely relates to coastal shipping, fisheries, and the ancillary trades that infused life on the Maine islands where the park is located. Salem Maritime National Historic Site includes numerous artifacts and documents as well as significant structures redolent

of Salem's great shipping era. Boston National Historical Park preserves the Charlestown Navy Yard, hosting USS *Constitution* and other historic vessels along with an active non-governmental maritime museum. Cape Hatteras National Seashore overlooks the "graveyard of the Atlantic" and exhibits specimens pertaining to the lighthouses and life-saving stations preserved within park boundaries. At Fort Caroline National Memorial, where two great 16th-century mariners clashed, the park museum contains important material on navigation in their time.[61]

Even some inland parks have collections pertinent to this subject. River boats in the Grand Canyon National Park museum illustrate developments to cope with the hazards of the Colorado. Vicksburg National Military Park has as a prime specimen the remains of USS *Cairo*, an ironclad gunboat that sank during the Federal campaign to capture the city, and some 6,800 objects that went down with the vessel, including weapons, supplies, and the personal gear of the 174-man crew. The recovery of *Cairo* was a long, complex, costly process spurred on by Park Service historian Edwin C. Bearss and other concerned individuals who enlisted volunteer help and intermittent funding from state, local, and private sources.[62] Such measures accomplished the salvage but could not provide the ongoing attention the collection demanded. The Service stored many of the artifacts and afforded what interim curatorial and conservation care it could until 1972, when the boat and its contents came into full park custody. The park exhibits several hundred of the specimens and actively cares for the rest in study storage.

Golden Gate National Recreation Area, established in 1972, embraced two distinct but related maritime institutions with significant collections. The San Francisco Maritime State Historic Park had rescued a three-masted schooner, a steam schooner, a bay scow schooner, a ferryboat, and a steam tug along with a modest collection of related artifacts. The San Francisco Maritime Museum had restored a three-masted ship moored at a nearby pier and operated a museum showing a fraction of its extensive artifact collection and the largest maritime research library on the Pacific Coast. The two institutions had outstripped the financial resources at their command, and Congress assented to their merger under Park Service administration as the National Maritime Museum, San Francisco. Park management clearly defined the museum's purpose and scope of collections as focusing on San Francisco commercial shipping, then organized the cataloging and safe storage of its estimated 15,000 to 25,000 artifacts.[63]

Park collections hold a few individual specimens of exceptional significance. Under a 1950 agreement the city of Philadelphia gave Independence National Historical Park custody of the Liberty Bell, arguably the most symbolic movable object in the United States from a national and international standpoint. Since then the park has expended much thought

and effort on its protection, conservation, exhibition, and interpretation. During Cold War tensions it made precautionary provisions to remove the bell quickly to secure hiding. It also enlisted expert help to analyze the physical condition of the bell, leading to careful internal reinforcement of the yoke. As the numbers of people who thronged to see and touch this potent symbol grew ever larger, the park developed means to maximize its accessibility without endangering its security. In 1976 it moved the bell to a new pavilion designed specifically for its protection and display.

Among numerous flags in park museum collections, two tattered and fragile specimens at Fort Sumter National Monument have a special aura. The fort's garrison flag, originally 20 x 36 feet, and its storm flag, 10 x 20 feet, marked the target of the Civil War's first shot. The storm flag was probably flown during the bombardment, and Major Robert Anderson raised the garrison flag for the final salute. He carried both away in honor.

Visitors to Independence Hall admire the handsome silver inkstand Philip Syng fabricated for the Pennsylvania colonial assembly in 1752 that stood at hand 24 years later when members of the Continental Congress dipped their quills to sign the Declaration of Independence. Close by on the dais sits the speaker's chair made for the state assembly by John Folwell in 1779 to replace furniture lost during the British occupation of Philadelphia. George Washington used this large armchair with half a sunburst carved in its crest rail as he presided over the Constitutional Convention. During the heated debates Benjamin Franklin wondered whether the sun was rising or setting; upon their successful conclusion he proclaimed it rising. Elsewhere in Independence National Historical Park visitors see a desk owned and used by Franklin.

Federal Hall National Memorial displays a man's suit given the Park Service by the Washington Association of New Jersey. Available evidence supports the belief that Washington wore it for his first presidential inauguration at that site. Ford's Theatre National Historic Site exhibits the suit Abraham Lincoln wore the night of his assassination, together with the assassin's pistol, the diary he kept during his flight, and the boot cut from his broken leg. The Yorktown Museum at Colonial National Historical Park preserves inner portions of two tents used by Washington during the Revolutionary War, one for personal shelter and the other for dining with his staff and guests. Valley Forge National Historical Park exhibits more of the sleeping marquee, while Arlington House, where George Washington Parke Custis preserved the tents for years, retains one of their carrying cases.

The collections of the National Park Service entail an endless responsibility for their management and care. These tasks concern the next chapter.

NOTES

1. *Museum News* 19, no. 7 (Oct. 15, 1941): 10-12; *Park Service Bulletin* 9, no. 7 (August-September 1939): 17; reports of the Conferences of Regional Museum Curators, Feb. 9-20, 1959, and Sept. 13-18, 1964, Regional Curators Conference 1964 folder, Curatorial Services Division files, Harpers Ferry; Artifact management Survey folder, ibid.; Planning-Issue Paper 1970 folder, Old WML Files storage box, NPS History Collection, Harpers Ferry Center Library.

2. Inventories of Property (Collections) box, NPS History Collection. Appendix C of Ralph H. Lewis's *Manual for Museums* (Washington: National Park Service, 1976) reproduces a sample entry.

3. See Chapter Five.

4. Letter, Stanley A. Cain to J. Ross Eakin, May 22, 1934, Great Smoky Mountains NP box (4), NPS History Collection.

5. Great Smoky Mountains NP folder, Great Smoky Mountains NP box (1), ibid.

6. King, "A New Salamander (Desmognathus) from the Southern Appalachians," *Herpetologica* 1, no. 2 (Dec. 30, 1936); King, "Notes on the Distribution of Native Speckled and Rainbow Trout in the Streams at Great Smoky Mountains National Park," *Journal of the Tennessee Academy of Science* 12, no. 4 (October 1937).

7. Stupka interview by Herbert S. Evison, May 19, 1972, reels 137-38, NPS History Collection. As Stupka recalled it, Eakin told him, "The thing for you to do, since you're here, . . . instead of putting on a program, you get acquainted with the park—it's a big park—and work up the study collection, a lot of things need to be collected."

8. Ibid.

9. See, for example, John Thornton Wood, "Juveniles of Plethodon jordani Blatchley," *Herpetologica* 3, no. 6 (July 15, 1947), and memorandum, Superintendent, Great Smoky Mountains, to Director, June 20, 1960, Great Smoky Mountains NP folder, Great Smoky Mountains NP box (1), NPS History Collection.

10. NPS *Museum Handbook*, Part I, ch. 1, pp. 6-7 (1967). Revised Part II, ch. 4, p.

11. Museum Branch monthly report, August 1960, Monthly Reports Museum Division box, NPS History Collection.

12. Memorandum to Chief, Branch of Museum Operations, May 4, 1973, Great Smoky Mountains NP folder, Curatorial Services Division files, Harpers Ferry.

13. Memorandum, Allen to Regional Director, Southeast Region, July 19, 1982, ibid.; memorandum, Hitchcock to Associate Director, Cultural Resources Management, Mar. 3, 1983, ibid.

14. Natt N. Dodge, "Mister Grand Canyon," *National Parks Magazine* 33, no. 147 (December 1959): 2-5.

15. Ralph H. Lewis, "Collection Preservation Guide for Grand Canyon National Park," duplicated NPS report, 1980.

16. McDougall interview by Herbert S. Evison, Mar. 11, 1973, reel 169, NPS History Collection.

17. Petrified Forest (1906, made a national park 1962), Dinosaur (1915), Fossil Cycad (1922, abolished 1957), Agate Fossil Beds (1965), Florissant Fossil Beds (1969), Fossil Butte (1972), John Day Fossil Beds (1974).

18. G. R. Wieland, "Fossil Cycad National Monument," *The Living Wilderness* 9, no. 11 (September 1944): 20.

19. John M. Good et al., *The Dinosaur Quarry* (Washington: National Park Service, 1958), pp. 32-37. Having taken considerably more material than it could use, the Carnegie Museum obtained permission to distribute excess fossils among a number of qualifying institutions.

20. Archie L. Jones et al., *The Status of Florida Tree Snails (Liguus fasciatus) Introduced to Everglades National Park*, Report T-622, South Florida Research Center, Everglades National Park, April 1981; donor's statement of gift, Jan. 1, 1959, Museum Accession Files, Everglades NP. The rescue project continued with considerable success into the 1980s.

21. Memorandum, Chief, Division of Museum Services, to Regional Director, Southeast Region, July 14, 1982, Everglades NP folder, Curatorial Services Division files, Harpers Ferry; memorandum, Biologist, Division of Biological Resources, to Regional Director, Southeast Region, May 26, 1983, ibid.

22. "Description of National Park Service Collections," data reported to House Appropriations Subcommittee on Interior and Related Agencies, 1987, Curatorial Services Division files, Harpers Ferry. The Artifacts Management Survey of 1976 provided less complete estimates showing this ratio at about 76 percent.

23. See standards for archeological research in NPS-28, *Cultural Resources Management Guideline*, December 1981, ch. 2, p. 17.

24. Ricardo Torres-Reyes, *Mesa Verde National Park: An Administrative History, 1906-1970* (Washington: National Park Service, 1970), pp. 166-74, 294-96.

25. Ibid., pp. 303-12.

26. Charles H. Fairbanks, *Archeology of the Funeral Mound, Ocmulgee National Monument, Georgia* (Washington: National Park Service, 1956), pp. 1-2; Alan Marsh, "Ocmulgee National Monument: An Administrative History" (typescript), 1986, pp. 7-8, 20-24.

27. Charles H. Fairbanks, "Indoor Archeology," *Regional Review* 3, no. 3 (September 1939): 9-13. The collection received a substantial addition from salvage archeology in the park in advance of anticipated highway construction in 1961-62. The archeologists revived a proposal advocated by Kelly that led to establishment of the Southeast Archeological Center, which became custodian for most of the Ocmulgee collection.

28. Lewis, "Collection Preservation Guide for Grand Canyon National Park," pp. 19-21.

29. Ralph H. Lewis, "Collection Management Plan: Christiansted National Historic Site," duplicated NPS report, 1977, p. 18.

30. William M. Ivins conversation with Rockefeller interns (including the writer), Jan. 25, 1938.

31. Virginia L. Grattan, *Mary Colter: Builder upon the Red Earth* (Flagstaff, AZ: Northland Press, 1980); letter, Colter to Kenneth Ross, July 31, 1945, folder 333, Mesa Verde NP Museum Accession File; letter, Colter to Don Watson, Apr. 12, 1947, ibid. At Grand Canyon National Park Colter designed Hopi House, the shelter at Hermits Rest, the Watchtower at Desert View, and interiors for Bright Angel Lodge and Phantom Ranch.

32. Letter, Colter to C. G. Wallace, Feb. 13, 1955, folder 333, Mesa Verde NP Museum Accession File; letter, Colter to Oscar W. Carlson, Nov. 1, 1957, ibid.

33. Midwest Regional Curator Newell Joyner probably initiated the deal; see memorandum, Joyner to Superintendent, Pipestone NM, Nov. 10, 1964, in folder 89, Pipestone NM Museum Accession File.

34. Letter, Willis G. Tilton to Carl R. Stoddard, n.d., ibid.

35. *Colter Bay Visitor Center Indian Arts Museum, Grand Teton National Park, Wyoming*, folder in Grand Teton NP folder, Curatorial Services Division files, Harpers Ferry; letter, Ellenda Wulfestieg to Fonda Thomsen, Mar. 20, 1974, ibid.

36. Harrington, *Glassmaking at Jamestown* (Richmond: Dietz Press, 1952).

37. Watkins and Hume, *The "Poor Potter" of Yorktown*, Contributions from the Museum of History and Technology, Paper 54 (Washington: Smithsonian Institution Press, 1969); Norman F. Barka, "The Kiln and Ceramics of the 'Poor Potter' of Yorktown: A Preliminary Report," *Ceramics in America*, Winterthur Conference Report, 1972 (Charlottesville: University Press of Virginia, 1973), p. 291.

38. Caywood, "Final Report: Fort Vancouver Excavations," 1955, p. 71.

39. Diana R. Pardue, "Collection Preservation Guide, Fort Vancouver National Historic Site," 1980, pp. 29-30, Curatorial Services Division files, Harpers Ferry. Lacking staff to catalog and file all the specimens for study, the park sealed an estimated 750,000 objects in airtight metal cans.

40. NPS-28, Release No. 2, ch. 2. p. 18.

41. Release No. 1, 1967, Part I, ch. 1, p. 11.

42. Bruce W. Stewart and Hans Mayer, *A Guide to the Manuscript Collection, Morristown National Historical Park* (Morristown: National Historical Publications Commission Microfilm Publication Program, n.d.).

43. In his 1954 "Historic Site Survey, Edison House (Glenmont) and Laboratory, West Orange, New Jersey," Frank Barnes stated that "the Edison archives (of fundamental importance in themselves) should, ideally, be a National Archives project similar to the Roosevelt Library development at Hyde Park" (Part III, p. 27, copy in NPS History Collection).

44. Public Law 96-87, Oct. 12, 1979, U.S. *Statutes at Large* 93: 665.

45. *Cultural Resources Management Guideline*, NPS-28, Release No. 3, August 1985, Technical Supplement, ch. 8, pp. 2-5.

46. National Collection of Fine Arts, *Inventory of American Paintings* (Washington: Smithsonian Institution, 1976). The Harpers Ferry Center Library has a printout of Park Service paintings in the inventory arranged by park and by artist.

47. David H. Wallace, "The Independence National Historical Park Collection of Historical Portraits: A Brief History," mimeographed report, 1959, NPS History Collection.

48. James B. Wilson, "The Significance of Thomas Moran as an American Landscape Painter," Ph.D. dissertation, Ohio State University, 1955, p. ix. Aubrey L. Haines minimizes Moran's role in the establishment of Yellowstone (*Yellowstone National Park: Its Exploration and Establishment* [Washington: National Park Service, 1974], p. 115).

49. Robert Shankland, *Steve Mather of the National Parks* (New York: Alfred A. Knopf, 1970), p. 109; Fritiof M. Fryxell introduction in Amy O. Bassford, ed., *Home Thoughts, From Afar: Letters of Thomas Moran to Mary Nimmo Moran* (East Hampton, NY: East Hampton Free Library, 1967), p. 5; memorandum, Ralph H. Lewis to John M. Kauffmann, Dec. 10, 1965, Branch of Museums Dailies storage box, NPS History Collection.

50. Museum Branch monthly reports, July 1957 and March 1958, Monthly Reports, Museum Division box, NPS History Collection. Jorgensen's home/studio housed the park's first museum (Chapter One) and became the park's principal exhibit building for the painting collection after being moved to Wawona. The Jorgensen and Hill paintings lent to the Oakland Museum later returned to the park.

51. Howard R. Driggs, *Westward America* (New York: Somerset Books, 1942), p. v; NPS press release, July 28, 1947, in folder 433, box 74, Carl P. Russell Papers, Washington State University Library.

52. Memorandum, Regional Curator to Regional Director, Mid-Atlantic Region, May 27, 1975, Fort McHenry NM folder, Curatorial Services Division files, Harpers Ferry; memorandum, Chief, Division of Museum Services to Park Technician, Fort Sumter NM, Mar. 8, 1978, ibid.

53. *Park Service Bulletin* 7, no. 5 (June 1937): 24.

54. *Park Service Bulletin* 7, no. 10 (November 1937): 7; Kendall, *Rifle Making in the Great Smoky Mountains*, National Park Service Popular Study Series, History No. 13 (Washington: National Park Service, 1941).

55. *Park Service Bulletin* 9, no. 3 (April 1939): 18.

56. Peterson, *The Fuller Collection of American Firearms* (Philadelphia: Eastern National Park and Monument Assn., 1967), p. 4. Fuller, a retired engineer and brick manufacturer, lived in Chattanooga and was able to participate in the installation of his collection at the park before his death in 1957.

57. Springfield Armory NHS folder, Curatorial Services Division files, Harpers Ferry.

58. Wilhelmina S. Harris, *Adams National Historic Site, A Family's Legacy to America* (Washington: National Park Service, 1983); Wilhelmina S. Harris, "Furnishings Report of the Old House, Adams National Historic Site," typescript, 10 vols., 1966–68.

59. "Furnishing Plan for the First Floor of Congress Hall," Independence NHP, October 1965.

60. "Furnishing Plan for the Assembly Room," Independence NHP, February 1970.

61. The Fort Caroline museum has a collection of exceptional quality thanks to the generosity of U.S. Representative Charles E. Bennett, who used his military disability pension to purchase rare objects in consultation with Harold Peterson.

62. Bearss, *Hardluck Ironclad: The Sinking and Salvage of the Cairo* (Baton Rouge: Louisiana State University Press, 1966); Virgil Carrington Jones and Harold L. Peterson, *The Story of a Civil War Gunboat: U.S.S. Cairo* (Washington: National Park Service, 1971). Bearss and his wife, Margy, unquestionably were primarily responsible for saving *Cairo* and its contents as a rich document of maritime history.

63. Golden Gate NRA folder, Curatorial Services Division files, Harpers Ferry. The museum became San Francisco Maritime National Historical Park, a discrete unit of the national park system, in 1988.

COLLECTION MANAGEMENT

Museums have only recently employed the term "collection management." Used in its broad sense it refers not to a new aspect of museum work but spotlights a traditional one: the care and use of collections.

Holding its collections in public trust, a museum stands accountable for faithful stewardship of the objects it accepts. The title of curator assigned long ago to the occupation most typical of museums doubtless signaled realization of this fundamental responsibility. Curating collections involves a range of unending tasks, many behind the scenes where neglect or failure may escape immediate notice. Calling basic collection care a management function helps museum authorities avoid the risks of slighting it.

The National Park Service *Museum Handbook* in 1967 defined what would later be called a well-managed collection as meeting five criteria: its specimens are selected purposefully, they are readily available for study, they are well preserved, they are accompanied by adequately organized data, and they are used to their potential in the park program. Purposeful selection results from accession policies clearly formulated and firmly applied. Ready accessibility requires systematic specimen housing and thorough indexing. Satisfactory preservation demands safekeeping and a regimen of continual informed care. The permanent linking of objects and supporting data necessitates systematic museum records. Much of the use that justifies a collection does not occur spontaneously but comes through studied development, an area in which park museums have still not done enough. The following sections consider in turn accession policies and procedures, museum records, and specimen protection and routine care with a brief look at collection use. A concluding section discusses problems of curatorial staffing, upon which success in meeting all five criteria hinges.

Accession Policies and Procedures

Accession policies concern what a museum collects and how it acquires or disposes of the specimens. They begin with a clear definition of a museum's purpose. Museums in national parks have had a good start in this regard, for the governmental action establishing each park defines its purpose more or less clearly. A park ordinarily preserves for public benefit and enjoyment an area containing one or more natural or cultural features deemed to have national significance. The museum as an instrument of the park collects what contributes to the preservation, understanding, appreciation, and non-consumptive use of the park's significant resources.

Simple as this may sound, forging effective accession policies proved a step-by-step process. Perhaps Major Bigelow took the first logical step

in 1904 when he ordered that plants for the Yosemite arboretum come from within park boundaries (Chapter One). As formal policy developed, geographical limitation on museum collections continued as a rule. Specimens would come from within park boundaries except when park needs clearly justified a wider scope. Secretary Franklin K. Lane set such a limit in his 1918 instructions to the new National Park Service. Director Stephen T. Mather underlined it in his 1925 annual report, in which he also restricted the subject matter of park museum collections to the park story.[1]

The next step took a sharper look at what should constitute the park story. The Committee on Study of Educational Problems in National Parks, a spinoff from the Laura Spelman Rockefeller Memorial grants that first professionalized museum work in the parks, brought the clear thinking of Hermon C. Bumpus, John C. Merriam, and their committee colleagues to bear on what national parks should interpret. Their study led in January 1929 to the recommendation that interpretation should concentrate on those primary features for which the parks were established. A document approved by the director five months later tempered the committee proposal appreciably: instead of calling for the minimum of interpretation to do full justice to the prime features, it specified interpreting both primary and secondary aspects in proportion to their significance.[2] By retaining significance as a broad criterion, however, it excluded commonplace features of natural history or local culture exemplified elsewhere.

A decade of rapid museum expansion followed during which these precepts served as the basic guideline for museum collecting. After 1935 the new Museum Division saw the need to define more precisely what specimens to acquire. A policy memorandum issued in 1939 established the scope of museum exhibits for Park Service areas. It reaffirmed the primacy of a park's nationally significant natural and historical features, which determined the content of the park story to be told by museum exhibits. The park museum would acquire the specimens needed to tell this story. The memorandum acknowledged the need on occasion to go beyond park boundaries in telling the story and called for allotting exhibit space in proportion to significance. At the same time, it cautioned that extraneous factors such as popular interest or the intrinsic value of specimens should not justify exhibits in park museums. The memorandum's contents were incorporated in a general museum policy and procedure directive issued March 13, 1940.[3]

Thereafter the policy continued to evolve in form but remained constant in principle. The *Field Manual for Museums* in 1941 condensed the statement of general policy on what to collect while making clear that it applied to the study series as well as the exhibit series. Further abbreviated in the 1967 *Museum Handbook* and the 1976 *Manual for Museums*, it held

firm in its purpose of keeping museum collections centered on the park and focused on the park's nationally significant aspects.[4]

The general principle required expression in terms of the significant features of individual parks. At their second Service-wide conference in 1940, the park naturalists recommended that each park in its approved museum plans prepare and maintain lists of objects required "to develop and improve its reference and study collections as well as its public exhibits." As the *Field Manual* put it the next year, every park should define the scope of its own collection consistent with the general policy.[5] Such a definition would tell the superintendent what specimens from the park or related to its story and purpose should be collected and preserved in the museum. Several pages of suggestions followed to help the parks set locally specific goals and limits in collecting natural history, historical, and anthropological objects.

Achievement of approved scope of collection statements for all parks took more than forty years. At first the Museum Branch sought a proper vehicle for them—one giving them official status from authoritative approval after expert review, plus continued visibility. They had direct relevance in three planning documents, although none afforded a really good fit. For a time the statements tended to be fragmented among the three.

The park master plan offered the most direct link to general accession policy and carried the maximum potency, but it was a document easily overburdened with detail. In the early 1940s the master plan contained an introductory statement of the park's significant themes and an interpretive statement spelling out concisely the park's significance. These statements took the initial step in defining the collection scope, but the plan's format did not accommodate fuller development of the definition. Efforts to require scope of collection statements in master plans in the 1960s did not bear fruit.[6] When the general management plan superseded the master plan in the 1970s, it continued to supply the baseline information on significance needed for developing a scope definition without including the definition.

Meanwhile the Museum Branch sought to use the other two documentary vehicles in which it had more direct involvement: the museum prospectus and the exhibit plan. At the request of southwestern park naturalists, Ned Burns drafted a suggested outline for museum prospectuses in 1953.[7] It supplemented the general instructions in the *Field Manual* and was incorporated into Volume 25 of the Service's *Administrative Manual*. One item in the outline covered the scope and use of study collections. The 1954 prospectus for the Museum of North Carolina Minerals on the Blue Ridge Parkway contained an early example of the definitions of scope that resulted. Although only a paragraph in length, the statement justified the need for a study collection of minerals and accompanying reference

materials, carefully estimated the numbers of specimens the series should contain and the cabinets to house them properly, and noted the equipment users of the collection would require.[8] The scope definitions produced in other museum prospectuses tended to a corresponding degree of utility but seldom achieved sufficient depth and detail in analyzing collection needs.

For the scope of the exhibit series, the counterpart of the prospectus was the exhibit plan. The Museum Branch had responsibility for preparing exhibit plans, which received thorough review before approval by the director. Each included in some form a want list of objects for the exhibit units specified. A scope of collection definition could hardly be more precise, which is why the scope statement in the prospectus was limited to the study series. The restriction was perhaps shortsighted, because exhibits normally require refinement. Consequently the *Museum Handbook* (1967) recommended that scope of collection definitions comprehend both study and exhibit series.

About 1960 a new planning document, the interpretive prospectus, replaced the museum prospectus. The draft Interpretive Planning Handbook issued in 1965 called for a scope of collection section, and interpretive prospectuses thereafter quite commonly contained brief statements of collection scope. Activity standards issued by the Service in 1971 placed the collection scope statement in the interpretive prospectus and listed the approved scope as the first standard under curatorial activities.[9]

The Division of Museum Services took the next forward step following its organization in 1974. Observing that the verbal efforts of its predecessors had failed to get most parks to delimit adequately the scope of their museum collections, division chief Arthur Allen called the regional curators into conference that May and won their agreement to strive for an approved statement of scope in every park. Marc Sagan, Harpers Ferry Center's manager, released the conference recommendations a few months later but without endorsement. Continued prodding from the division prompted Sagan to write the regional chiefs of interpretation on the subject almost a year after the conference. Blaming confusion over what planning document should incorporate statements of collection scope for the failure of many parks to prepare them, he suggested that regional curators be made responsible for writing them. Park superintendents would then recommend them to the regional director for approval and filing in the parks. This succeeded in divorcing the scope statement from existing documents and letting it stand alone. Sagan concluded that he did not consider preparation of the statements as urgent business, an assessment the division did not accept.[10]

At this point the Division of Museum Services initiated the preparation of collection management plans (Chapter Five). Work on the prototype plan required the team to draft a much-needed scope of collection statement for

Hubbell Trading Post National Historic Site. It became apparent that a sound collection management plan had to build from a clear definition of collection scope. Perhaps as a result, the Service's *Management Policies* of 1978 stated that "a scope of collection statement, in which the limits of museum collection are detailed, must be prepared and approved for every park."[11] The first Service-wide conference of museum curators later that year resolved that "curators have the responsibility to keep their collections in accordance with an approved Scope of Collections Statement."[12]

The policy moved nearer fulfillment in 1979. In response to an investigative report from staff of the House Committee on Interior and Insular Affairs, the director convened a conference to reexamine how the Service should manage its cultural resources. Acting on the recommendations of the conference, he approved establishment of a new position of chief curator on his staff. The new chief curator gave high priority to instructions for writing scope of collection statements and to ensuring that each park had one. Completion of this task extended beyond the period of the present study.[13]

Policies on how to collect and dispose of specimens were a necessary complement. During the formative years of Service policy on what they should acquire, park museums continued to collect—not always wisely. In 1920–22 Ansel Hall scored conspicuous success in soliciting gifts and loans of objects to start a museum for Yosemite National Park. Convinced that this was the way to promote museum development in the parks, he urged the practice on the western park interpreters whose work he supervised for a dozen years. In 1934 Director Arno Cammerer gave similar advice for Great Smoky Mountains National Park. Parks of archeological significance, facing an early struggle to prevent their artifacts from going legally to distant museums or illegally into private collections, pressed the need to build up their own collections. Carl Russell, the Service's first staff expert on museums, set an example in gathering specimens with energy and skill. When he transferred to Washington in 1935 to lead museum development in the eastern national parks, he began a sustained effort to persuade the new breed of park historians that they should collect historic objects.

Ned Burns, who succeeded Russell as chief of the Museum Division on an acting basis in August 1936, viewed widespread encouragement of collecting from a different angle. With years of practical museum experience, he understood the sticky problems that often accompanied museum acceptance of gifts and loans. Such acquisitions had gotten many well-intentioned curators into trouble and sometimes had crippled their institutions. Fearing that park museums might become swamped with useless objects, Burns proposed to the director in September a policy to prevent the acceptance of specimens without due deliberation.

The only law he had found applicable to the subject was the Sundry Civil Act of June 5, 1920, which authorized the secretary of the interior to accept donated property within park boundaries or money for the purposes of the national parks. Having failed to find any delegation of this authority to Service officials, he concluded that only the secretary could accept gifts. He therefore proposed that parks be required to submit any offers of museum donations to the director for referral to the secretary. This would give the director the opportunity to have the Museum Division evaluate the authenticity and appropriateness of the material offered, the capability of the Service to care for it, and the possibility of any hidden disadvantages. The policy would also discourage park museums from accepting most loans.[14]

Burns redrafted his proposal as a memorandum from the director. Quoting the law, his draft memorandum bluntly stated that no Service employee could accept gifts for park museums, described procedures for obtaining secretarial approval, and stated reasons for the policy.[15] Evidently some found the policy too strict, for rather than approving the draft Burns' superiors brought the matter before the Advisory Board on National Parks, Historic Sites, Buildings, and Monuments at its next meeting in March 1937. The board recommended that parks should not be authorized to accept restricted gifts or loans.

A much-revised memorandum to the field on the subject received secretarial clearance that July. It stated that superintendents should reject all offers of gifts or loans of museum material not obviously suited for display or study in a national park. This limited prohibition allowed a superintendent to accept objects inappropriate to his park but relevant to another. The directive permitted acceptance of specimens if they were significant only to one park, would require no excessive amount of museum space, and were free of restrictions on their use, display, or disposal. Offers not meeting all these criteria would be referred to the director. Superintendents were to report receipt of all museum gifts and loans immediately to the director. They were also to document each gift or loan with a form letter to the donor or lender, who would be asked to sign and return an enclosed copy.[16]

On October 9, 1937, the director sent out a supplementary memorandum warning superintendents not to confirm a lender's claims about an object's identity or association with some historic person or event.[17] With this amendment the gifts and loans policy was incorporated in the general museum policy memorandum of March 13, 1940. The *Field Manual for Museums* restated it the next year, and it remained relatively stable throughout the period of this study.

Such modifications as did occur tended to follow organizational changes. After regionalization of the field service in 1937, correspondence

regarding museum gifts and loans that formerly went straight to the director would clear through the regional director. This intermediate supervision of policy execution brought to the surface an inherent problem. Whether a gift or loan had local or more than local significance could determine whether a park acted directly on an offer or referred it to higher authority. Yosemite promptly disagreed with its regional office on a specific case. The park considered John Muir's oak desk of local importance because of Muir's role at Yosemite. The regional director believed Muir's wide role in conservation made the desk of more than local significance and thus a matter for the director's consideration.[18]

Further postwar decentralization produced delegations of authority that set monetary limits on the value of museum gifts park superintendents might accept. At least by July 1967 superintendents in Grade GS-11 or above could accept donations valued at $10,000 or less. Superintendents below GS-11 could accept donations up to $5,000.[19]

The Service intended the form letter of acknowledgement to act as a legally binding agreement as well as an expression of thanks. The 1940 museum policy memorandum combined the gift and loan forms issued in 1937 into a single model with alternative terms such as gift/loan, donor/lender, specimen/collection, and park/monument. Some parks mimeographed exact copies and sent them to donors or lenders striking out the inapplicable words, creating a cold, bureaucratic impression. Late in 1944 the director issued a new sample with more graceful phrasing, but it remained a form letter. A 1953 field order urged superintendents to draft individual acknowledgements. Letters for gifts were to include a statement to be signed by the donor: "I hereby give unqualifiedly to the National Park Service the article(s) listed above."[20] This was intended to ensure that the donor understood the nature of the transaction and also to clarify that the Service rather than the individual park acquired ownership, a concept important to the free interchange of specimens among park museums when justified by interpretive, scholarly, or curatorial needs.

The order included a model letter that aimed at sincerity and warmth, but it did not prove as effective as hoped. When the regional curators conferred on museum problems in 1964, they reported that the letters of acceptance still often sounded impersonal and unfriendly. They proposed another model, which included a reminder that the gift was tax-deductible.[21] Their version with slight changes was the one used in the *Museum Handbook* in 1967. It remained the official guideline until November 1977, when the Service adopted a deed of gift form as a more direct and businesslike way to ensure the transfer of clear title.

The 1953 order also called for superintendents to cap completed transactions with certificates—a small one for most gifts, a letter-sized one for especially noteworthy donations. Handsomely engraved on fine paper

by the Treasury Department's Bureau of Engraving and Printing, both included the Interior Department seal but the larger had it embossed in gold.[22] The Museum Branch doled out both sizes to the parks on request. Supplies lasted into the 1970s, when the Service obtained less costly replacements through the Government Printing Office. The dignified appearance of the certificates was often compromised by amateur calligraphy in filling in their blanks, and their design required giving more prominence to the objects than to the donors. The certificates nevertheless served their purpose.

Postwar delegations of authority canceled the prewar requirement that offers bearing conditions be referred to the director. To compensate, the 1953 field order and subsequent statements of gift and loan policy reiterated the objections to restricted gifts, quoting the American Association of Museums' strong 1945 resolution on this subject. Guidance in the *Museum Handbook* aimed at gracious rejection of offers if donors could not be persuaded to drop conditions.

In response to a recommendation at a 1939 superintendents' conference, the director appointed a committee to address museum acquisition problems under Ned Burns' chairmanship in April 1940. National defense preparations intervened before the committee could carry out its assignment, but its initial efforts reflected Burns' concern about disposal of the numerous extraneous specimens in park collections. His thoughts toward solutions were shaped in part by the *Clearing House for Southwestern Museums*, a newsletter developed by museum anthropologists in five southwestern states to share information about their collections and research.

Burns described his plan for a Park Service museum clearinghouse at a park naturalists' conference in November 1940. It would collect from all parks lists of specimens their museums sought and objects they had acquired but did not need. Circulation of the lists would enable parks to make transfers. Reliable data on museum methods, bibliographies and other references helpful to isolated curators, and queries from research workers seeking to consult park collections would circulate as well. Burns saw the clearinghouse operating primarily as a newsletter appended to the Branch of Research and Interpretation monthly report. As an interim step, he got the director to issue a memorandum in January 1941 setting a referral and review procedure parks should follow when a gift offered to one seemed more appropriate to another.[23]

Under existing law objects acquired by park museums became federal property that could not readily be divested by the parks or the Park Service. In contrast, non-federal museums could often exchange or sell unneeded specimens. Burns recognized that an adequate solution to the excess museum property problem would require similar authority and thus new legislation. After the war he and his colleagues gave much attention to this

matter. The right to exchange specimens with other museums and educational institutions probably dominated their initial thinking. Authorization for exchanges with private collectors and dealers was also desirable, even though barter with them might strain curatorial sagacity. They evidently decided against seeking authority to sell unneeded specimens. This would surely have been opposed by officials guarding the sale of government property, and sales by non-government museums had been fraught with difficulties.

Those drafting the needed legislation took the opportunity to address other park museum issues. Park museums were hampered in borrowing objects for exhibition or study because they could not use appropriated funds to insure them, customarily the responsibility of the borrowing institution. An embarrassing incident involving the insured shipment of a painting to Independence National Historical Park probably contributed to the inclusion of loan provisions in the bill.[24] On a more general level, the drafters of the bill aimed to establish beyond question the legal basis for the Park Service to acquire, hold, and manage museum collections.

Following the bill's introduction in Congress, Senate subcommittee hearings led to two amendments. A departmental witness proposed one to allay concerns that the proposed law would authorize appropriations to buy museum specimens rather than merely allowing donations of funds for this purpose. The subcommittee inserted the second change, a seriously restrictive section requiring notification of the committee and a donor or his heirs before a park could dispose of donated specimens. Fortunately this amendment did not survive final passage of what became the Management of Museum Properties Act, approved July 1, 1955.[25] Ned Burns did not live to see its enactment, but park museums reaped the fruits of his efforts.

The 1955 act helped materially to weed out excess museum specimens. Progress in this direction proved slower than hoped because relatively uncommon opportunities to acquire particularly wanted objects were usually required to prompt exchanges.[26] For the law to attain maximum success, park museums needed sustained efforts to refine their collections systematically through continual transactions aimed at upgrading overall quality and usefulness. This demanded knowledgeable curators in the parks, a rare management investment. By the end of the period covered in this review the legislation clearly required amendment. Chief Curator Ann Hitchcock had her staff develop proposed changes to speed the deaccessioning and refining processes.

Meanwhile the 1955 act did create valuable flexibility in such undertakings, as illustrated at Hopewell Village (now Hopewell Furnace) National Historic Site. Early in the park's development the Brooke family, who had owned the site and whose ancestors had operated the furnace, offered to sell the park its 19 carriages and considerable related gear. When

the Service failed to act, Hopewell's well-meaning historian bought the collection for the park out of his own pocket. Although the Service reimbursed him a few years later, there were continuing doubts about the relevance of the collection, which reflected the fashionable life of a well-to-do manufacturer during a period after Hopewell Furnace had ceased production. It also occupied a large barn on the site needed for proper interpretation of the park story.

Finally in 1963 the Museum Branch aided the park in working out a rather complex solution. With the assistance of an expert carriage consultant, the park loaned the collection to the Staten Island Historical Society, which was initiating a carriage museum. The agreement provided that the park would transfer ownership of the collection piece by piece as the society located, acquired, and exchanged older work vehicles of equivalent value appropriate to furnace operations.[27] The 1955 act facilitated both loan and exchange aspects, including transportation and insurance. Without it the Brooke collection would doubtless have become a nagging clearinghouse problem.

The clearinghouse issue resurfaced in 1959, when the Museum Branch brought together curators temporarily appointed in the regional offices to upgrade museum records. The conference agenda looked ahead toward tasks that would justify retaining the curatorial positions in the regions. Because work on park records had given the curators a better grasp of the status of the collections than previously available, they were asked if the collections appeared to need clearinghouse help and how and where it should be provided.[28]

The conferees drafted a strong clearinghouse justification based in part on the increased specimen exchange opportunities and risks created by the 1955 act. They proposed that parks supply the same data on wanted and surplus specimens called for in the 1940 Burns proposal but that clearinghouse functions be based principally in the regional offices. With the steadily improving records, parks could provide the information on surplus specimens by submitting duplicate catalog cards for them. The regional curators would match want lists with surplus specimens within the park system, initiate negotiations outside the Service to exchange excess material for needed objects, and propose suitable long-term loans for items with educational potential not otherwise disposable. When superintendents approved tentative arrangements made by the curators, the specimens would move directly from collection to collection.

After the crash records improvement funding ended, a field order of April 3, 1961, activated the regional clearinghouse scheme. *Museum News* carried an announcement to alert outside museums to the new specimen exchange opportunities Park Service museums afforded them. Although park museums put the new procedure to considerable use, they tended to

have more interest in acquiring specimens than in clearing collections of unneeded material, hampering effective application of the process. For example, Region Two had received few records of surplus specimens by 1962 when it found itself heavily pressed by the Jefferson National Expansion Memorial to obtain many specimens by exchange for its large planned museum.[29] Regional clearinghouse activity, which continued during the remaining two decades covered in this study, may also have been impeded by some parochial reluctance among parks or regions to share lists of prime trading stock. Certainly increased clearinghouse activity in the central offices of the museum program encroached on the regional scheme.

At the central level the clearinghouse concept became entangled with the idea of central specimen repositories. Two of these, the southeastern and southwestern archeological centers, existed at the time of the 1959 regional curators' conference. The latter occupied the Gila Pueblo research facility at Globe, Arizona, where it served a valuable secondary purpose of safely housing collections from small national monuments lacking space and staff to care for them. While the curators supported these facilities, they generally did not favor central repositories for park collections.[30] This conclusion reflected the basic principle that park museums and their collections are site-related. Because these collections achieve their fullest utility in helping to preserve and interpret specific places, locating them elsewhere should be no more than a temporary expedient. The Museum Branch at the time reminded management and the Mission 66 planners repeatedly of this.

Central repositories also tended to become clearinghouse way stations, as happened in the Division of Museums. When the temporary move of the central museum staff to Springfield, Virginia, in 1966 gave it access to some additional storage space, the Branch of Museum Operations was able to house for Cape Hatteras National Seashore a surfboat awaiting restoration. Evidently the rumor of free storage space for bulky museum objects spread rapidly. Yellowstone National Park sent temporarily displaced historic army furnishings from Fort Yellowstone. Several parks followed with cannon tubes. Historic paneling came from Independence National Historical Park. Two more surfboats arrived.

The pending move to Harpers Ferry, where it would have scant facilities to store specimens, found the newly reorganized Division of Museums with a sizable central repository. Partly to solve this dilemma the division set up a Branch of Curatorial Services under Chief Curator Harold Peterson to remain in Springfield (Chapter Five). The repository became known as the Museum Clearing House, reflecting Peterson's important role in specimen acquisition, authentication, and care on a Service-wide basis. Under his supervision the stored material found use in transfers and exchanges as appropriate.

When the repository/clearing house was transferred to Harpers Ferry in 1978 under the Division of Museum Services, the emphasis was initially on getting the several thousand objects recorded and accountable, placing them in secure and orderly storage, and developing a clearinghouse procedural manual. As attention shifted to clearinghouse operations, the ambivalent nature of the affair became more apparent. The Division of Museum Services, aiming to help park museums dispose of unneeded specimens and get needed ones through responsible transfers and exchanges, would virtually eliminate the repository function in due time. Other Harpers Ferry Center divisions involved in museum development, viewing the clearinghouse collection as a pool of specimens for new exhibits, would welcome more objects available for use where needed. Friction between these concepts led to a 17-page set of guidelines that divided clearinghouse functions between Museum Services and Reference Services. In 1981 HFC's manager proposed turning the clearinghouse over to the Branch of Historic Furnishings, a principal user of it as a specimen pool, but was dissuaded.[31]

The situation changed in 1982, when reorganization at Harpers Ferry placed the Museum Clearing House among the responsibilities assigned the new chief curator in the Washington Office. Ann Hitchcock halted acceptance of surplus objects and set a goal of terminating its role as a repository.

Museum Records

Curatorial training and experience emphasize the importance of records, for a museum specimen unaccompanied by supporting information has limited usefulness. Recording demands so much thoughtful attention, however, that curators have too often postponed or slighted the time-consuming task. In consequence, museums have commonly suffered from incomplete or missing records except where enlightened management has applied the resources and pressures to assure full, accurate, and continual record-keeping.

When park museums first appeared, no widely accepted museum record system or guidance existed. Glimpses of how parks responded to the situation in the early years reveal faltering starts. Mesa Verde National Park accumulated artifacts without supporting records at least until 1915, when Stephen Mather wrote a stern letter to the superintendent requesting assurance that the park could catalog specimens accurately before venturing to exhibit them publicly (Chapter One). Six years later a new, knowledgeable superintendent had still not recaptured all the missing data that would make the specimens usable.

Yosemite National Park began keeping systematic museum records in 1920. The first entry, Accession No. 1 in a bound blank book, reported an Indian burden basket received July 1. Presumably Ansel Hall set up the record book to keep track of the material he was collecting for the park museum he hoped to get established. It continued in use until full, and a second book followed. Containing a total of 8,263 entries, these comprised the basic museum records for Yosemite until about 1960 although worked over and extensively supplemented by additional forms and data.

The original book showed promise but had serious flaws in concept and execution. Each double page was laid out under nine column headings designed to record the details of transactions, but the entries promptly confused this intention by assigning each object a consecutive accession number. The record thus became a specimen list accompanied by acquisition data but scant catalog information. Such an imbalanced mixture of transaction and specimen data made both sets of data awkward to use. The first 22 entries, for example, constituted a single gift from one individual and the next ten a separate donation from another person under the same date. Entries soon began to violate chronological sequence, suggesting that the recorder made them when time permitted rather than as a first priority duty—the single problem that perhaps most jeopardized the integrity of park museum records for many years. Apparent haste led to designating donors and lenders only by initials and surnames with little or no indication of address, a practice sure to create trouble for later curators. Other entries implied gifts of money enabling the park staff to buy the objects listed.

Responsibility for the Yosemite museum records passed to Carl Russell in September 1923. Russell started quickly to compensate for some inadequacies in the system, using the volunteer assistance of his wife to prepare a typewritten card index of the collection. Russell's deeper roots in museum work as well as a predilection for careful record-keeping sustained his concern for the Yosemite records beyond his employment on the park staff. His monthly report for October 1929, for instance, showed seven days in the park spent at such curatorial tasks as recording and storing all museum accessions not currently on exhibit while training the park naturalist to maintain the system.[32]

The First Park Naturalists' Training Conference in November 1929 briefly considered museum records. As at Yosemite, the conferees thought in terms of an accession number assigned to each specimen acquired, an accession book in which to record how and when each was obtained, a catalog of the collection in the form of a card file arranged alphabetically by subject with the cards containing both object data and location, and secondarily an alphabetical card file of donors. They understood that the accession and catalog records had permanent importance and recommended storing a duplicate set of catalog cards in a fireproof vault. On the other

hand, no speaker seemed to realize that acquisition transactions required one set of data while specimen identification and study called for another. No suggestions emerged regarding what sort of book or cards to use or what information to record in what format, nor were subject classifications proposed for indexing. Continued diversity in park museum records would surely result. The principal paper on museum records made the all-too-realistic observation: "Clerical work must assume secondary importance for obviously the matters of prime consideration must be taken care of first."[33]

Laurence Vail Coleman's *Manual for Small Museums* contained a chapter on museum records that provided an unofficial standard for park museums during the next decade. Coleman pointed out that museums indeed require two sets of recorded data, one of accessions and the other of specimens, each calling for a series of numbers. Accession numbers designated each successive transaction by which a museum accepted custody of specimens. A catalog number distinguished each individual specimen and should be permanently affixed to it. He advocated keeping accession records in a bound volume to minimize the risk of losing data. To promote complete and consistent transaction records he proposed column headings for the accession book. He also suggested adding the accession number to documents related to the transaction and filing these together. While less specific on the form of the catalog, Coleman noted that most museums used cards in preference to bound or loose-leaf books. He recommended desirable catalog entries. Finally he described four useful auxiliary records a museum could derive from the basic accession book and catalog.

Nudged by Carl Russell as museum advisor, park museums began moving toward these practices in the early 1930s as park museum development accelerated. Attention centered on exhibit planning, preparation, and installation, however, and exhibit work absorbed most of Russell's time. Opportunities to promote or demonstrate the importance of maintaining the records came only sporadically, principally during his extended assignments at Yellowstone.[34]

About 1932 the Park Service issued its first standard museum record forms. They consisted of two printed 5x8-inch cards: an accession record on buff stock (Form 10-253) and a catalog record on white (Form 10-254). Russell, if he originated them, probably intended them to supplement rather than replace accession and catalog books. The accession cards would provide an auxiliary donor file and the catalog cards an index to the collection. Unfortunately, several of the spaces on the cards were inadequate for the data they were intended to accommodate.

Russell did not lose sight of museum records concerns when he moved to Washington in 1935 to organize and become chief of the Service's Museum Division (Chapter Three). Impressed by the size and value of

collections in several of the new eastern park units, he realized the urgency of recording them. When he stationed curator John Sachse at Morristown National Historical Park that April, he evidently included in Sachse's assignment preparation of a records procedure for the park collection. The curator promptly drafted a report, "The Museum Records for Morristown Museum," which the superintendent approved without delay.[35]

Sachse's proposal conformed closely to what Russell had in mind for Service-wide application. Following Coleman's manual it specified the two basic records: a bound accession book and a loose-leaf catalog. The loose-leaf format enabled the catalog to be typed with carbon copies for daily use with the collection while the original remained secure. Sachse's report also called for typing exact copies of the accession book and catalog entries on the official accession and catalog cards, which would be filed to produce a donor index and a collection index. Additional copies of the catalog cards could be used to establish an auxiliary loan record and extra copies would permit essential cross-indexing of the classified catalog file.

Russell had the report mimeographed and distributed to the parks with instructions to adopt the system it contained. The system was reaffirmed in the March 13, 1940, general museum policy memorandum and the 1941 *Field Manual for Museums*, which clarified the instructions. The *Field Manual* mandated use of the standard accession and catalog cards and told how to requisition them. It made standard compliance easier by specifying that the accession record should be chronological, the accession book a ruled record book of high-quality paper, and the entries written in permanent carbon ink. It prescribed that the catalog book and cards should be typed except for changeable data such as specimen location (to be entered in pencil) and called for more detailed descriptions on the cards. It also looked more closely at the matter of classification.

For natural history collections, standard references in botany, zoology, and geology already provided widely accepted taxonomic classifications. At least in the Southwest archeologists and ethnologists seemed to have settled on workable object classifications. That left the growing collections of historic objects. A two-level outline of cultural materials reprinted from Coleman's manual provided a fairly comprehensive list of larger categories parks might use. It was assumed that the smallest categories would become self-evident as indexing progressed. For the intermediate categories that would contribute most to a useful index, the *Field Manual* merely suggested that each park select its own. The state of material culture scholarship at the time precluded uniformity among the park catalogs in this regard.

By this time the Museum Division realized that the specimen records necessary for an archeologist studying excavated material differed somewhat from those a curator required. The *Field Manual* began an effort to reconcile the divergent needs by pointing out the apparently satisfactory

modification adopted at Ocmulgee National Monument. The monument simply added a third set of the catalog cards and filed them by archeological site. Archeologists also needed on the catalog card the exact location an object had occupied in the site as well as a field number to link the specimen to other field records.

When National Capital Parks undertook to catalog the White House furnishings after the war, Museum Division/Branch staff became sufficiently involved to gain valuable experience (Chapter Six). Ralph Lewis studied the problem, proposed recording procedures and forms, helped apply catalog numbers to most of the collection, and cataloged a considerable number of items. Convinced that the Park Service had a basically sound museum record system, he adopted it in principle. A top-quality accession book, printed and bound to order, drew on National Museum practice and provided a fresh standard for park museums. A redesigned catalog card kept the size and important data location features of the parks' Form 10-254 but revised and rearranged a number of the headings for clarity and ease of typing.

In 1950 the Museum Branch made available to the parks a new catalog card reflecting the improved layout developed for the White House.[36] Because management then saw other operational problems as more urgent than museum record-keeping, its use was limited. During the same period the branch began training park staff in the recommended records practices as part of the Museum Methods course, but this effort reached only a fraction of those responsible for performing the work. Satisfactory progress on the records would require a stronger incentive.

A forewarning of the nature this stimulus would take had come in 1940, when an Interior Department investigator observed that Petrified Forest National Monument lacked adequate accountability for its museum collection. The monument made a complete inventory and began including the more obviously valuable specimens in its accountable property records under property management regulation. About 15 years later inspectors made a similar discovery about the Lincoln Museum collection in the old Ford's Theatre building, which Congress was interested in restoring. This prompted a Service-wide survey of the status of park museum records, which disclosed that few if any parks had kept these records to a satisfactory standard. Existing records were often incomplete and backlogs of unrecorded material had accumulated. As a result, early in 1956 management directed the Museum Branch to plan and execute a project that would bring the records up to date by June 30, 1960.[37]

The existing records system, judged to have a sound basis in principles, required improvement rather than replacement. As revised it should become mandatory. It should ensure the material permanence and security of the primary records. Users of the system should receive clearer, more detailed

written instructions. Record keepers in the parks would also need expert supervision and assistance to complete the updating in the allotted time. The project therefore had two aspects. The branch would have to refine the system, define the standards, and prepare the guidelines without delay. A field staff would then have to provide on-site guidance and help.

Suzanne Fox, formerly a registrar at the Brooklyn Museum, brought particular competence to the initial stage of the project. Joining the branch in May 1956 and remaining until the following March, she helped decide what features of the existing system to retain and which ones to change, then worked out the necessary details of forms, materials, and procedures for the revised system.[38] After writing specifications and initiating procurement she set out to draft the essential users' guide.

The revised system kept the basic distinction between accession record and catalog and retained the separate, strictly linear sequences of accession and catalog numbers.[39] It held to the concept of the accession book but specified a new standard book that the branch would supply to the parks. Printed and bound, the book would contain permanent all-rag ledger paper laid out under seven column headings. Fox also established the practicability of replacing the loose-leaf catalog book and index card by a new Form 10-254. A higher standard of permanence for the original catalog record was sought by having this copy of the form printed on archival paper, by instructing that it be typed using a ribbon of known durability, and by having it bound in a special post binder kept in a fire-resistant vault separate from the other copies. The layout of the form facilitated more complete and systematic entries. A second or working copy was printed on blue bond paper of slightly lighter weight and a third on strong white card stock suitable for filing. The Government Printing Office supplied the forms in pads assembled in the proper order so that all three copies could be completed simultaneously using carbon paper.

Vera Craig transferred from Morristown National Historical Park to the position vacated by Fox in May 1957. She put the finishing touches on the instructions and sent them to the regional directors for comment in June. The approved instructions went out to the parks in November as the *Museum Records Handbook*.[40]

With funds supplied by the project, the regional offices recruited curators to supervise the crash program in the field. Region One (Southeast) chose Elizabeth Albro, who had studied anthropology at the University of Arizona and worked at the Buffalo Museum of Science. Newell F. Joyner, a former park naturalist, left the University of Nebraska State Museum to take the Region Two (Midwest) position. For Region Three (Southwest) Franklin G. Smith, who had university training in anthropology and field experience in three southwestern parks, left his post in Washington as management assistant to the Service's chief archeologist. Region

Four (Western) picked a Service archeologist, Leland J. Abel, also with solid field experience. Horace Willcox, trained in anthropology at Princeton and the University of Pennsylvania, transferred to the Region Five (Northeast) position from a regional archeological survey. All entered on duty by January 1958. Craig gave each a thorough introduction to the new forms, prescribed materials, and procedures. The director announced their mission in a memorandum to all field offices underlining the urgency of the project.

The regional curators visited the parks, helped analyze their existing records, and worked with their recorders until they had mastered the new procedures. Thereafter they had to spur continued progress and monitor the quality of records being produced. They did not encounter entirely smooth sailing. The massive workload posed by the 135 parks with museum collections kept them under continuous pressure. Existing accession records often presented problems requiring detailed solution before recording in the new permanent books could begin. Normal staff mobility shifted some of the freshly trained recorders to new assignments, making it necessary to go back and train their replacements. Some managers failed to sustain the sense of urgency the project's schedule demanded or to realize how much work the records required.[41] Every region had at least one large collection that might have monopolized its curator's attention.[42]

Vera Craig provided central support and guidance. In January 1958 she helped Willcox set up the new accession records for Independence National Historical Park. The following month she trained a full-time curator National Capital Parks had hired to catalog the Lincoln Museum collection. In April she went out to Region Three to assist with records problems. A series of progress reports she initiated in July helped to monitor the project as a whole. Much detailed work in planning and conducting the first regional curators' conference in February 1959 and in carrying out its recommendations fell to her. She spent much of two months during 1960 inspecting and helping with specific museum records situations in Regions Two, Three, and Four.

Craig also held continuing responsibility for the *Museum Records Handbook* as it evolved with the project. Having tested the handbook in the field, the regional curators brought to their first conference several matters that appeared to need attention. Their discussions resulted in Amendment No. 1 issued in June 1959. It explained better the distinction between books, manuscripts, and photographs to catalog as museum specimens and those to treat as library material, and it added details to the instructions on required reports to the finance office. Its principal component was a new chapter setting forth a standard classification system for park museum collections. In drafting the scheme Craig and her Museum Branch colleagues had consulted extensively with National Museum curators to

obtain recognized classifications and references in the various subject fields. They had also examined a wide range of published classifications, particularly in the area of material culture. The regional curators debated the draft at length and contributed especially to the archeological and ethnological categories. Because the system as added to the handbook could not avoid complexity, catalogers in the parks failed to apply it consistently.

The records project secured an extension of funding until June 30, 1961, after it became evident that at least four large collections could not be fully cataloged within the initial period and several other collections seemed doubtful of completion. As the extended deadline approached, field reports indicated that most parks—those with collections of moderate size—had brought their museum records up to date in accordance with the revised instructions.[43] Permanent, systematic, essentially uniform museum records had become the norm, even though the quality of data still often fell below the standards desired. Management throughout the Service had a heightened awareness of responsibility for recording museum collections. The project had accomplished much.

In mid-1963 the Museum Branch requested a second conference of regional curators, primarily "to maintain the museum records program in high gear."[44] Postponed until September 1964 by the reorganization that created the Branch of Museum Operations, the conference took place at the Mather Training Center in Harpers Ferry. The curators brought information showing how much the program had already slipped. They reported 36 Park Service units with museum records seriously in arrears, including several where large collections remained partially uncataloged. Other parks had acquired quantities of additional specimens from archeological projects or other sources for which they had failed to program adequate recording funds. A few newly established parks brought collections in need of recording. The remaining backlogs occurred in parks without trained staff to do the job. The curators also acknowledged their general dissatisfaction with the quality of data they had been able to get the parks to enter in the museum records.

To deal with the cataloging backlogs the curators proposed to develop individual action plans for their delinquent parks. The plans would recommend the temporary assignment of existing park staff to the tasks, set realistic target dates for completion, and estimate probable costs. If management would authorize the proposed work, it should get done. The regional curators expected to lend assistance particularly through hands-on training of the assigned workers. They blamed the poor quality of data in the records so far produced under their supervision to the inadequate training they had been able to provide. Management response to these conference recommendations underlined the travel restrictions still in force.[45]

The conferees also recommended some changes in the handbook. One specified the accessioning of objects received on approval, for which a park became accountable even though it might retain them only briefly. Another refinement made mandatory the source of accessions file, a useful auxiliary record. A third change resulted from thorough discussion of a vexing question in recording archeological collections. When an archeologist delivered a collection to a park museum before having culled fragmentary duplicate material no longer considered useful for research, the museum would accession the collection as a whole and defer cataloging the specimens until the archeologist had removed the excess items.[46]

After the 1964 conference the new Branch of Museum Operations continued central staff supervision of the museum records program as well as its technical support. The branch functioned as the supply base for forms and materials the parks required for museum record-keeping. It monitored progress through continued reports from the regional curators. It also maintained the handbook of instructions up to date while incorporating it into the expanding *Museum Handbook*. In 1965 the branch staff set up an internal procedure it hoped would help raise cataloging standards in the parks. Specimens sent to the central museum branches for preservative treatment or inclusion in exhibits would go back to the park accompanied by new or revised records that aspired to be "a model of completeness, consistency, accuracy and scholarship in cataloguing practice."[47]

Establishment in 1956 of the Service-wide museum records system anticipated a union catalog of all park museum collections. The Museum Branch could not then document a demand for a central catalog, but David Wallace brought supportive evidence when he joined the Branch of Museum Operations in 1968. During his curatorship at Independence National Historical Park he had "fielded many queries which were of broad enough scope to warrant general search of Service museum records."[48] He drafted a justification for a general catalog of Park Service museum collections in connection with an abortive issue paper prepared by the Division of Museums in 1970 (Chapter Five). Wallace and Arthur Allen, his successor in responsibility for museum records, continued to request funding for a central catalog. Their persistence succeeded in 1977 with the establishment of the National Catalog, whose subsequent development led to important changes in the records system as a whole.

From the mid-1960s the Branch of Museum Operations watched closely the developing applications of automatic data processing in museums. Most early efforts concerned specialized types of collections, whereas the Service would need a system matching the wide aggregate scope of its scattered collections. Increased value would result from a system that could also link park collections to those in museums outside the Service. Computer specialists in the Washington Office showed an interest in the museum

catalogs at least as early as 1969, but in 1973 Wallace needed to dampen their interest by pointing out that the existing catalog records required much preliminary work.[49] Four years later establishment of the National Catalog led the Division of Museum Services to take a fresh look at computers in museum cataloging, which became usual in the next decade.

Specimen Protection and Routine Care

Museum specimens, like all material objects, deteriorate toward eventual destruction. The process may be slow and barely perceptible or swift and obvious. Agents present in the environment or within the specimens themselves cause the damage. Environmental factors include common forms of energy such as light and heat; air as a mixture of chemically active gases and as a bearer of abrasive or reactive dust; water in all its forms; and biological agents such as insects, fungi, bacteria, small mammals, and humans whose careless hands often accelerate injury. Museums can never completely win the war against deterioration but must wage it without surrender. Knowing that with proper care they can greatly prolong the life of specimens, curators must forever take measures to protect them from the agents of deterioration, mitigate the effects of these agents, and compensate for the damage that nevertheless occurs.

The interminable campaign involves both operational and logistical problems, the preferred solutions to which changed during the years covered in this study. Knowledge about the precise nature of the destructive agents, their modes of attack, and their complex interrelationships expanded and deepened. Methods of detecting dangerous conditions and protecting specimens from them developed correspondingly. Procedures and equipment became more sophisticated. An auxiliary profession of conservators emerged as a strong ally (Chapter Nine). Expanded concern for health hazards associated with some protective measures led to changes that improved specimen care at increased costs. Protective space in buildings, proper storage equipment, environmental controls, and informed care were recognized as fundamental requirements.

Before the 1890s museums generally gave little thought to storerooms for specimens, because everything they collected typically went on display. Museologists then began to recognize that some specimens were more valuable for study than exhibit. A study series needed space in which its specimens could be filed safely and kept readily accessible for examination. Long-established institutions found it difficult to allocate space for study storage, however, and when national parks started constructing museums in the 1920s, guidelines for including collection storerooms were not yet well established.

Some respected museums built in that decade removed study series from the exhibit cases and stored them in drawers set into the case bases. Although this saved the expense of providing separate storerooms, curators and visiting scholars consulting the study specimens and the public who had come to view the exhibits got in each other's way. Storage rooms dedicated to the preservation and use of study collections were clearly the right answer, but they increased the size and cost of museum buildings, and the more public features claimed higher priority.

These factors appeared to operate frequently in the case of park museums. The prototype Yosemite Museum built in 1925 under the auspices of the American Association of Museums seems not to have provided for the park's study collection, for in 1929 Carl Russell installed 15 mouse-proof and light-tight compartments in its attic for collection storage.[50] Superintendent Jesse Nusbaum of Mesa Verde apparently planned to include collection storage space in the museum he was building in the mid-1920s, but construction funds did not extend that far down his list of needs.

Museums built under Depression emergency programs during the next decade fared little better in this regard. The Morristown museum, designed by experienced museum architects, did include a modest collection room with attached vault. Ocmulgee's museum also contained a collection storeroom within the symbolic earth mound on which it appeared to stand; it proved too damp for the purpose although used of necessity for some years. The architectural constraints associated with patterning most of the museum/administration buildings at the military parks after period houses in their vicinities made it hard enough to create effective exhibit rooms and evidently more difficult to include storage for study collections.

The Museum Division noted the omission of such space with concern. Its 1949 *Field Manual* declared study collection rooms equal in importance to exhibit rooms in park museums. It recommend dividing the study collection space into two parts, one for protective storage and an adjacent room in which to study and work on the specimens. It suggested that the study collection in most parks would need at least as much floor space as the exhibits. It should remain close to staff offices and exhibit rooms for access and surveillance. It did not belong in the basement.

Park Service architects had little occasion to consider these guidelines until after World War II, when Lyle Bennett, an architect in the Region Three (Southwest) office, compiled a thorough and thoughtful supplement to the Museum Division statement of building requirements. His Check List for Museum Planning gave due attention to facilities for collection care. It clearly distinguished between the collection storeroom and study rooms or laboratories. For the collection room it considered uses, general requirements, and location. It also noted storage vaults. First issued in 1948, the

checklist continued to aid museum architectural planning as Bennett refined it.[51]

The Service architect who designed the museum building for Custer Battlefield National Monument no doubt referred to it. Constructed in the early 1950s, this museum contained a good-sized vault for collection storage with a workroom adjacent. Its basement location disagreed with the guidelines, but the museum site on a sagebrush hill appeared to minimize risks of high humidity or flooding.

Collections also received careful consideration in the museums built in 1957. That designed by Service architect Cecil Doty for Grand Canyon National Park had a large room on the main floor for the study collection adjoined by a relatively spacious work and study room for the seasonal naturalists and visiting scientists who would use it. Staff offices, library, and exhibit rooms were conveniently close. Unfortunately, other managerial needs for the work and study room soon caused its functions to be shifted into the storeroom with the collection. The extensive Jamestown and Yorktown study collections at Colonial National Historical Park were brought together for curatorial efficiency in the basement of the new visitor center at Jamestown. One end of the basement opened at grade level, where a glazed wall gave well-lighted space for curatorial operations. Events in this case showed why the guidelines advised against basements for storage functions: within a few years hurricane-driven flood waters of the James River invaded the collection store.

The 1957 structures set course for the hundred or so visitor centers erected under Mission 66 that housed park museums. In mid-1960 the Museum Branch declared that the new buildings had provided improved study collection space in most instances. Evidently this observation came from plan reviews rather than inspection of the actual buildings. By the end of the year, following visits to several of the parks involved, the branch revised its position. The most common and serious faults discovered in collection storage provisions included inadequate size, basement location, shared occupancy or access, and lack of environmental controls. Adverse effects on the collections and their use became increasingly apparent as time passed.[52] By the 1970s some kind of corrective action seemed urgent, at least to central and regional curatorial staffs.

As a first step the Museum Services Division led by Arthur Allen began preparation of collection management plans in 1975 (Chapter Five). These undertook to devise and recommend practicable solutions for proper collection storage that would largely overcome the deficiencies of existing museums. In especially critical cases the division prepared briefer collection storage plans that concentrated on this aspect. Both plans depended on park management for execution. In a few instances, as at Antietam National Battlefield in 1981 and Nez Perce National Historical

Park in 1982, the division in collaboration with the regional curator took a work crew to the park to physically upgrade storage conditions as proposed in the plan. Such measures, continuing beyond the period of this study, alerted Service management and created momentum toward bringing collection space up to acceptable standards.

Proper specimen care also depended on furnishings for the storerooms. Specimen containers needed to achieve three objectives: to protect the specimens and attached data from agents of deterioration, to facilitate systematic arrangement of the stored objects so items could be located readily for inspection or study, and to use the available volume of storage space efficiently.

By the time museums became a matter of concern in national parks, natural history curators elsewhere had worked out practical cabinets for filing study skins, herbarium sheets, and pinned insects. A few manufacturers marketed specialized equipment for these contents, although many museums continued to build their own. For other kinds of natural history specimens and material culture objects that ranged more widely in size, shape, and vulnerability, individual museums often devised their own solutions. In park museums adoption of collection storage equipment went through four fairly distinct stages.

The first stage consisted of local ad hoc actions. Yosemite must have enclosed its 1922 museum collections in some manner because Carl Russell reported carrying out an overdue fumigation of them the next year. In 1929 he improvised study collection storage in the attic of the newer Yosemite Museum, as noted above. A few weeks later discussions at the First Park Naturalists' Training Conference showed that the conferees had some familiarity with natural history specimen storage, probably as practiced at the universities where they had studied.[53] Coleman's *Manual for Small Museums*, to which they referred during the conference, described and illustrated a simple cabinet with drawers a museum might build for storing a variety of specimens.

More substantive help marked the second stage, which came in the mid-1930s as a byproduct of the Depression. The Field Division of Education and its successor Western Museum Laboratories, employing a considerable number of emergency relief workers, produced a variety of supplies and equipment that parks could order for not more than the cost of materials and shipment (Chapter Three). In April 1938 the Western Museum Laboratories sent each park an illustrated catalog of the various products it could supply under this program, including study skin, herbarium, geology, and insect cabinets.[54] Park museums across the country welcomed the chance to acquire these sturdy, practical cases at bargain prices although the total number of cabinets produced may not have been large.

This second-stage storage equipment represented good functional design. The shop probably patterned the study skin cabinet after the type used by the Museum of Vertebrate Zoology at the University of California, which Joseph Grinnell had made a model of well-organized storage. The case had a wood frame sheathed in galvanized iron, held a single tier of shallow drawers with wood sides and composition board bottoms, and opened by a removable front held against a rubber gasket. Its counter-high top provided a convenient work surface. The exterior construction of the herbarium cabinet resembled the study skin case but the interior contained two double tiers of fixed rectangular compartments to hold dried plants mounted on herbarium sheets and assembled in systematic folders. The geology case replaced the metal sheathing with plywood and held two tiers of smaller, sturdier drawers to carry the heavier specimens involved. The metal-sheathed insect cabinet, designed in consultation with university entomologists for park museum use, aimed to store a relatively small collection.

The Museum Division in Washington addressed the proper storage of park museum collections in the 1941 *Field Manual for Museums*. Recognizing what the Western Laboratories called a study skin case as a preferred container for most kinds of relatively small objects, the manual termed it the standard study collection cabinet. Because some items in most collections would not fit in one of these or required special protection, the manual also recommended herbarium cabinets, the Western Laboratories' insect cabinet, commercial map files for large flat paper artifacts, and wire screens for hanging framed pictures. It advised placing specimens singly in trays when filing them in the standard cabinet drawers to minimize damage from handling and from the objects jostling against one another.[55]

The postwar Museum Branch moved slowly toward the third stage, adoption of a standard system for storing park study collections. Several advantages were envisioned: all parks would use equipment of high quality specifically designed to accomplish the three objectives cited above; disseminating professional advice and instruction in its efficient use would become practicable; centralized procurement would help ensure quality and economy; personnel moving from park to park would transfer their familiarity with the equipment; and any surplus of standard equipment could find ready use in another park. The branch detailed its proposals for a uniform system of storage equipment in a 1956 amendment to the Service's *Administrative Manual*.[56]

Its recommendations stemmed from considerable study. The basic cabinet prescribed for park storage was based on the "quarter section" units used by the Smithsonian's National Museum but was of all-steel rather than steel-and-wood construction. Established manufacturers in the field helped the branch develop the necessary specifications using the inside drawer

dimensions of the National Museum prototype as the starting point. Other components of the system needed less modification in stock items. Compartment size in herbarium cabinets had become standardized, so all-steel counter-high ones from several manufacturers required only the removable door and polyurethane foam gasket prescribed for the basic cabinet to meet branch specifications.[57] The new standard for herbarium cabinets called for one double tier of compartments rather than two as formerly. Such a unit would hold up to nine hundred herbarium sheets so one might suffice for some parks. Manufacturers also offered counter-high steel insect cabinets holding twelve glass-covered drawers, which differed in size and construction. The branch favored the more tightly closing National Museum drawer, but because several parks had already acquired cabinets and drawers of the Cornell type, the latter became the Service standard.

The 1956 standard storage system included a few other items. Because no product then on the market offered museum standards of protection for large flat paper specimens such as maps, architectural plans, and newspapers, the branch specified ordinary map file cabinets. Their large shallow drawers did not close tightly enough to keep out dust or insect pests, so parks were advised to enclose each stored sheet in an individual folder. The National Archives had developed document boxes lined inside and out with aluminum foil for smaller papers; while neither insect- nor dust-tight, they gave surprisingly good protection from fire. For document boxes and specimens too large to fit in the standard cabinets, the branch identified the most suitable steel shelving available from Federal Prison Industries, the required source of government procurement. For storing framed pictures the branch suggested the metal-framed screens made for building partitions. As a final item the 1956 system described a gun rack parks could make, suggested how to adapt it for swords and scabbards, and noted that it could be fitted into a stock utility cabinet.[58]

Putting the system into effect required procurement funds. For new museums, storage equipment was supposed to be programmed as part of the construction costs, but this rarely happened. For existing museums, parks were to provide for needed equipment in their annual maintenance and rehabilitation program. This helped but seldom sufficed. The Museum Branch tried to fill the gap by reserving part of its annual allotment for the preservation of collections to aid parks in acquiring storage equipment. Parks would submit lists of their unfunded storage needs, the regional curators would review and rank them, and the branch would issue year-end purchase orders to the limit of available money. Meanwhile the branch tried to keep on hand stocks of specimen trays and document boxes for distribution to park museums on request.

The third-stage specimen storage system of 1956 remained the Service standard for about twenty years while undergoing some refinement. Following discussions at the first regional curators' conference in 1959, the branch recommended and stocked a small supply of the Solander-type print boxes used by many art museums to store unframed works of art on paper. It also included as a regular part of the system the steel utility cabinet from the Federal Supply Schedule previously suggested for housing the gun rack. This inexpensive unit gave at least visual protection to several kinds of museum objects that did not require or fit well in the standard cabinets. Part I of the *Museum Handbook* released in July 1967 presented a rational description of the third-stage storage equipment with illustrations and included revised specifications for the principal cabinets. It referred to a double-width version of the standard specimen cabinet for larger animal skins, elaborated on uses for the utility cabinet including a new revolving sword rack, and added expanded aluminum panels as an alternative to wire mesh for storing framed pictures.

Users of the equipment in the parks required more than verbal instructions. The Museum Branch in its annual methods course made a point of showing trainees how curators at the National Museum and elsewhere carefully filed specimens in similar cabinets. Russell Grater provided standard cabinets for demonstration and practice when he set up the first courses for park interpreters at the Mather Training Center in 1963–64. When a 1972 flood prompted Harpers Ferry National Historical Park to move its study collection to higher ground, David Wallace and his Branch of Museum Operations staff helped make the new installation a model of the Service's study collection storage policy. For the rest of the decade and beyond curatorial methods trainees used it as a resource to observe how the system worked in practice.

The change to a more flexible fourth stage during the 1970s and early 1980s came as conservation scientists significantly expanded knowledge about the agents that cause specimens to deteriorate, the processes involved, and ways to counteract them, and as suppliers responded with new protective products. The Division of Museum Services under Arthur Allen moved promptly to help parks keep abreast of the rising standards and product availability.

The division added a number of new acid-free boxes and folders to the established system to upgrade the storage of paper and textile artifacts. Standard specimen trays were converted to fully acid-free construction. With additional manufacturers supplying steel storage cabinets, the division reviewed and adjusted its standard specifications to allow removable doors with special hinges and improved closing mechanisms. The availability of more specialized cabinets for costume storage or visible storage of objects frequently consulted in comparative studies, for example, led it to acquire

and test samples for park museum use. Released from mandatory purchase of steel shelving from Prison Industries, it adopted a more flexible type although it used plywood shelves requiring compensation for increased fire and outgassing hazards. Continuing beyond the period of this study, such additions and changes perhaps eroded to some extent the advantages previously attained by narrower standardization.

The ongoing search for ideal specimen storage was paralleled by efforts to control environmental conditions. Curators long knew that they affected the preservation of collections but knew less about practical ways of controlling them. Although the 1941 *Field Manual for Museums* revealed some familiarity with the injurious effects of light, especially sunlight, it gave no advice on how to measure the light reaching specimens or on how much to tolerate. Ultraviolet filters received bare mention. The *Field Manual* pointed out in several connections the damage caused by too much or too little moisture in the air, but its index did not include relative humidity and only a reference in the library chapter recommended the use of sling psychrometers to measure it. The manual suggested setting out pans of water to add moisture and pans of calcium chloride to remove it. Silica gel, a newer alternative desiccant, was noted. So was air conditioning, although Service architects questioned its practicality in park situations. No level of relative humidity was recommended beyond a single statement that air at 50% relative humidity and 70° F would protect against mold.

Park museums like many others made slow progress in achieving climate control for collections. In 1955 the museum laboratory fabricated evaporating pans for George Washington Birthplace National Monument to help raise winter moisture levels in the memorial mansion, where antique furnishings evidently needed such protection. The laboratory itself relied on pans of water, towel wicks, and electric fans to humidify its collection storeroom during winter months. Probably late in the 1950s curators at Independence National Historical Park used more sophisticated commercial humidifiers to help protect the important portrait collection in temporary storage during the restoration of Independence Hall.

In 1962 the Museum Branch consulted an international expert in the expanding field of museum climatology and upon his advice assembled two kits for measuring relative humidity. Each contained three instruments packed in a fitted shipping case. The basic component, a battery-powered aspirated psychrometer, measured the relative humidity in a room and served to calibrate the other two instruments—a spring-driven hygrothermograph and a dial hygrometer. The former could measure and record on a chart both temperature and relative humidity inside an exhibit case or storage cabinet continuously for a week. The dial instrument could hang on a wall or inside an exhibit case to be read periodically. Circulated to the parks from the Museum Branch office and the western laboratory,

both kits received extensive use. In 1964 Regional Curator Elizabeth Albro reported that none of six park museums where readings were taken showed acceptable standards of environmental control even though some had air conditioning or humidifiers/dehumidifiers. The branch issued her report with a definition of desired relative humidity as between 50% and 65% and a warning that levels below 45% or above 70% courted serious specimen deterioration.[59]

Preliminary conclusions drawn from this sample of park museums called for a wider study. In the spring of 1965 all parks were requested to examine the conditions under which they maintained valuable museum objects. The standard of 50–65% relative humidity was accompanied by advice to avoid rapid changes within those limits. Light meters were added to the traveling kits and a standard of no more than 15 footcandles with the ultraviolet component removed by filters was set for light on exhibited specimens. Study collections were to be stored in darkness. Parks failing to meet the standards were to report the shortcomings to the new Branch of Museum Operations by the end of the year. Resulting information helped the branch formulate the climate control section of the 1967 *Museum Handbook*. It altered the relative humidity recommendation to 45–65% and added a temperature goal of 60–75° F.[60]

The work of conservation scientists continually expanded and refined knowledge about the environmental needs of specimens, making further changes in park museum practice necessary. During the period under review these changes principally involved guidelines, equipment, and training. The *Manual for Museums* of 1976 lowered the recommended range of relative humidity for collections to 40–60% and gave more specific advice on the detection and control of air pollutants. More park museums and greater sensitivity to environmental hazards called for monitoring far beyond the capacity of the original kits. Under Arthur Allen the Branch/Division of Museum Services responded by trying out a much wider range of available instruments and, looking toward a time when every park museum would have its own set, managed to multiply the amount of monitoring equipment on hand for tracking conditions in park collections. Through emphasis in curatorial methods courses and other instructional opportunities, more and more parks came to have employees concerned about and capable of measuring environmental conditions in museum storerooms and exhibit cases.

Protecting vulnerable specimens from insect infestation was another aspect of collection care that responded to advances in conservation research. Periodic fumigation having long been recognized as the surest form of protection, park museums with well-informed staff followed this practice from the start, normally using carbon disulfide during the 1920s and 1930s. After experts rated this highly flammable substance extremely

dangerous to those much exposed to its fumes, the 1941 *Field Manual for Museums* recommended instead fumigating with a mixture of three parts ethylene dichloride and one part carbon tetrachloride. This fumigant, used in treating stored grain, was marketed in 55-gallon drums. Because a park museum might reasonably use a gallon a year, the Museum Branch stocked a drum so it could dispense gallon lots to requesting parks. (The scheme encountered trouble with shipping regulations for hazardous materials.)

Through the 1950s and 1960s the branch continued to use and advocate this fumigant based on consultations with Agriculture Department experts in the control of insect pests, but it made a change in the mode of application. The 1967 *Museum Handbook* emphasized the importance of fumigating organic specimens before placing them in a park collection and offered detailed instructions for doing so. Initial rather than periodic fumigation became the primary use for ethylene dichloride–carbon tetrachloride in park museums. Recognizing that parks could not afford sophisticated fumigation chambers or the space to house them, the handbook proposed using a standard specimen storage cabinet as the chamber and described how to do so. This limited the size of specimens that could be treated.[61] The instructions pointed out the deadly nature of carbon tetrachloride, but the fumigant mixture continued in park museum use until the 1970s.

Because the Environmental Protection Agency had not yet registered this pesticide for museum application, the 1976 *Manual for Museums* proposed that park museums use paradichlorobenzene as the fumigant. The 1941 *Field Manual* had regarded this volatile crystalline chemical more as a deterrent than an insecticide but recommended it for situations where carbon disulfide fumigation had been common. Although warning against inhaling its fumes, it advocated keeping a liberal supply in every cabinet drawer containing vulnerable specimens. In 1967 the *Museum Handbook* recommended refilling small trays of paradichlorobenzene crystals in each drawer or exhibit case housing organic material every three months. This amounted to continuous rather than periodic fumigation following initial disinfestation. The change in the *Manual for Museums* consisted of adopting paradichlorobenzene for initial fumigation, after which much smaller measured amounts would suffice for continuous fumigation.

The Division of Museum Services remained concerned that active collection care exposed workers to an unhealthy level of paradichlorobenzene, and questions persisted about the legality of using it in museums under EPA regulations.[62] A critical policy change followed in the early 1980s when the Service adopted integrated pest management. Monitoring for evidence of infestation then became the first line of defense. Only as a last resort and with official permission could a properly registered pesticide be applied.

Because national parks developed museums on a firm belief in their utility, collection care presupposed collection use. Exhibit specimens hardly had to prove the point. They remained important tools in park interpretation even though they lost their prime narrative role during the last 15 or so years under review (Chapter Five).

Perceiving that park interpreters generally let the exhibits perform their functions passively, the central staff of museum professionals long sought to stimulate their use. The 1941 *Field Manual* in its chapter on the museum in use and both the 1967 *Museum Handbook* and the 1976 *Manual for Museums* in their chapters on using collections described ways to increase the effective use of exhibit specimens through planned interpretive activities. The Museum Methods training course also emphasized such programs through field trips to illustrative museums, discussions, and reading assignments. Resulting applications in park museums were only occasionally documented, however.[63]

Study collections have also had important uses, both actual and potential. Because use of the study series is typically inconspicuous and because they often hear more about the costs than the profits of maintaining study specimens, park managers have sometimes questioned the value of these accumulating objects for which they stand accountable. Park study collections in fact have served three principal uses.

First, these collections have provided park interpreters with ready reference libraries composed of actual objects accompanied by data. Their familiarity with the specimens in their custody has undoubtedly increased the accuracy and incisiveness of the interpretation visitors have received. Seasonal interpreters have necessarily depended in many instances on the collections for first-hand knowledge. Resource specialists need to verify the identification of involved organisms before safely recommending management actions. Park visitors with special interests have made significant reference use of park collections.

Research use draws more notice. Study collections in park museums provide raw material for fruitful investigations. The published flora of numerous parks rest on the herbarium collections in park museums. Most archeological collections in park museums represent research either published or accessible in report form. Park collections hold specimens that have formed the basis for uncounted articles, books, and theses. Even so, the potential of park collections for serious study has not been fully realized.

Several factors have hindered such use. Research constituted a recognized part of the workload park interpreters once carried, but their aptitude for it varied, and as park visitation increased they found less time for it. Research specialists added to park staffs, detailed from central offices, or engaged under contract became responsible for most of the

investigations carried on in the parks. They normally worked on specific problems currently important for the preservation or management of a park and tended to make little use of collections. By the mid-1960s emphasis placed on interpretive skills led park management to frown on interpreters doing research. Efforts of park staffs to circulate information about collections available for study or otherwise promote their research use scored some success, but not enough to realize the potential of Service collections in this regard.

Beyond the period under review, two factors pointed toward significant growth in the research use of park collections. Computerized records would make them readily available to scholars in many fields. The inclusion of parks in the international biosphere reserve and world heritage sites networks obligated the Service to continually monitor changes by comparison with baseline collections. These collections illustrate the third kind of use. Constituting irreplaceable documents verifying research results, they must remain to the fullest possible extent available for restudy. Their retention constitutes a basic museum function and a fundamentally important use of park collections even if seldom exercised.

Curatorial Staffing

The Park Service museum program required curators to perform two distinct but inseparably connected functions. One group of curators focused on the museum policies, standards, and specialized skills necessary to meet Service goals and obligations. The other operated and maintained park museums. Neither exercised line authority over the other, and progress demanded mutual cooperation. The dichotomy arose because small park museums could not justify operating staffs with all the skills necessary to achieve and maintain the professional standards proper to a national park. Local staffs would have to be supplemented with the wide range of expert assistance called for on occasion.

Hermon Bumpus put his finger on the problem in 1929. Observing the experimental museum developments he had initiated at Yellowstone, he concluded that the park naturalists might operate the museums successfully if they received guidance and support from experts such as he had assembled to help plan, prepare, and install exhibits. Specialists also assisted in setting up proper care for the collections. The collaboration Bumpus tried out at Yellowstone led to the curatorial staffing pattern that came to typify park museums.

Preceding chapters have traced the evolving central staff of curators and specialists from the 1935 formation of the Museum Division in Washington to the reestablishment of curatorial services as a Washington Office function in 1980. In the 1935–64 period the staff curators concen-

trated on the exhibit aspects of park museums, but their production of the *Field Manual* and *Museum Handbook* demonstrated that they did not entirely neglect the collections. During the next 16 years a growing segment of the central staff focused on collection management. Even so the gap seemed to widen between Service museum standards and what park museums could actually achieve in consequence of both collections and visitation growing much faster than local staffing.

Staff curators stationed in the regional offices helped bridge the gap by bringing professional leadership closer to the parks. As noted above, the first regional curators held temporary appointments funded from a special museum records program. Their work showed the valuable role curatorial expertise could play at the regional level, and eventually all regions would establish and fill such positions. Among the original group Elizabeth Albro served the Southeast Region until 1966, then became regional curator for the National Capital Region. Newell Joyner manned the Midwest Region post until his death in 1965. In the Southwest Region Franklin Smith held the job until becoming a park superintendent in 1965. The Western Region temporarily gave up the position in 1959 when Leland Abel transferred to the Western Museum Laboratory. Horace Willcox met the difficult problems of the Northeast Region until 1966 when he transferred to a curatorship for New York State.

Their successors also made their mark. In 1966 Jean Rodeck Swearingen followed Frank Smith as Southwest regional curator. She had been nurtured in a museum environment and had worked for the Florida State Museum as well as the Western Museum Laboratory. When she transferred to the Denver Service Center in 1973, the region promptly secured Gordon V. Gay, the curator at Carl Sandburg Home National Historic Site. After two years of service in Santa Fe he accepted a transfer to become curator for the National Capital Region and was replaced by David M. Brugge, whose strong anthropological background had served him well as curator at Hubbell Trading Post National Historic Site. Brugge continued to provide expert guidance to the park museums of the area until his retirement in 1989.

The Western Region took longer to respond to corresponding needs. The position vacated by Leland Abel was not filled until Edward D. Jahns transferred from the Western Museum Laboratory in 1967. Jahns revitalized it until 1974 when he moved to the newly established curatorship of the Rocky Mountain Region. The Western Region again lapsed the position, not bringing in David Forgang, curator for the Southern Arizona Group, until 1978. Forgang left in 1983 to become Yosemite's museum curator and was followed by Diane Nicholson, formerly curator at Golden Gate National Recreation Area.

In the Northeast Region a briefer break in curatorial succession occurred. William J. Jedlick, assistant director of the Chicago Historical Society, brought historical museum experience the region particularly needed when he filled its vacancy in 1971. After reorganization created a North Atlantic Region in 1974, Jedlick remained as curator of the realigned Mid-Atlantic Region through and beyond the period under review. In 1975 the new North Atlantic Region selected Edward L. Kallop, Jr., from the museum curatorship at the Statue of Liberty National Monument, which included the American Museum of Immigration. He provided the region professional leadership in its critical museum problems until his retirement after the limits of this study.

The Midwest and Rocky Mountain regions had meanwhile selected staff curators who would serve them well into the 1980s. The Midwest Region chose John E. Hunter, curator of the Infantry Museum at Fort Benning. Entering on duty in 1973, he became a recognized expert in the protection and security aspects of collection care. As noted above, Edward Jahns transferred to the Rocky Mountain Region the next year.

Other regions experienced longer lapses. The Pacific Northwest Region, split from the Western Region in 1970, waited until 1980 to appoint Kent M. Bush, an experienced curator who had succeeded David Brugge at Hubbell Trading Post National Historic Site. The Southeast Region apparently did not fill the position Elizabeth Albro left in 1966 until appointing William K. Kay, a historian versed in the Civil War and military material culture, in 1979. When health forced Kay's retirement, H. Dale Durham from the Division of Museum Services staff followed him as regional curator in 1981. Gordon Gay's appointment ended a six-year lapse in the National Capital Region. He achieved a consolidation of the scattered collections before accepting responsibility for the National Catalog in 1978. Michael J. Vice filled the National Capital position from 1979 to 1982, bringing experience from the Army's museum system. When he rejoined the military museums, the talented and energetic deputy regoional curator, Pamela West, succeeded him. The Alaska Region, split from the Pacific Northwest Region in 1980, hired Jean Swearingen as regional curator in 1984.

Because federal civil service requirements demand more detailed analysis and definition of jobs than common in most museums, the title of curator has a more explicit meaning in the federal context. Federal classification standards for a museum curator series existed at least from 1949, but they fitted positions in the Smithsonian's big museums rather than those for park museums. Revised standards in 1962 incorporated Park Service concerns. They restricted the title to positions whose duties included all four "conceptual cornerstones of modern public museums—research, collection, exhibits, and education . . . ."[64] Museum employees

who specialized in fewer of these functions either fitted other professional classifications or belonged in the museum specialist and technician series. The 1962 standards recognized the two categories of museum curator and staff curator, the latter then unique to the Park Service. Most of those on the central staff and the regional curators were classified as staff curators (museum management). Curatorial members of the exhibit planning teams were staff curators (museum design). Curators of park museums fitted the museum curator category, which allowed for subject specializations.

When Hermon Bumpus decided that park interpreters should be able to manage park museum collections with occasional expert oversight and help on call, no alternative seemed financially practicable or professionally acceptable. Nearly all the interpreters then had degrees in natural sciences or anthropology and field experience in the techniques of collecting, preparing, and studying specimens. They found less time to care for collections as demands for visitor services multiplied, however, and changing emphases in the academic fields that supplied their ranks meant that their successors often came with less knowledge and concern about collections. Shifting more of the museum duties to seasonal interpreters did not overcome mounting neglect. Two solutions that developed in time involved hiring museum staff specifically assigned to work with collections.

The first consisted of engaging professional museum curators to manage park collections. Few of the natural parks had collections of a size that seemed to justify this approach. A 1965 survey led to recommending the retention of the curator position then at Grand Canyon National Park and the filling of ones at Yellowstone and Yosemite.[65] Yosemite did subsequently employ a capable full-time curator, Jack Gyer, but as much for its historical as its scientific collections.

When Carl Russell set out in 1935 to apply the Bumpus staffing formula to eastern problems, he discovered a complication in the historical park category. Unlike naturalists and archeologists, the historians assigned to interpret parks had virtually no academic training or field experience in assembling, managing, or using collections. In struggling to build his central museum staff, Russell also found few curators qualified for professional work in historical parks. The difficulty was deep-seated. Whereas natural scientists and archeologists possessed established techniques for collecting, preparing, labeling, recording, and storing specimens, historians lacked a corresponding body of recognized procedures. Because historians as a rule failed to see a scholarly use in collecting cultural artifacts, a tradition of systematic research to analyze and classify them hardly existed.

Morristown used emergency relief funds to employ Alfred F. Hopkins, an antiquarian with some museum experience in and outside the parks, as a temporary curator in 1938. The park moved promptly to set up the

curatorship as a permanent civil service position, the first such in any national park. Quite likely no register of eligible historical curators existed. Paul Hudson, a member of the Museum Division's still-temporary staff with some historical park museum experience who may have obtained civil service certification on a park naturalist register, secured the appointment in 1940 (Chapter Three). After World War II Ned Burns sent Albert McClure to Vanderbilt Mansion National Historic Site and James Mulcahy to Independence National Historical Park to care for their collections (Chapter Four). Neither had professional training as a curator but provided skilled hands and familiarity with Park Service museum policies. By 1964 there were full-time curatorial positions in twelve parks, ten of them historical.[66] In four of the latter the curators, devoted to the objects in their care but with limited background in museum requirements, had come with the collections. Some of the others came by transfer from other parks and disciplines. Few had as much curatorial training or experience as desirable.

One incentive toward higher qualification standards began in the mid-1950s when the Branch of Museums raised its sights regarding the role and quality of furnished historic structure museums (Chapter Six). Its search for curators possessing the requisite combination of historical and museological capacities led it to enlist such talents as those of Vera Craig, Worth Bailey, Sally Johnson (Ketcham), Nan Carson (Rickey), and Agnes Downey (Mullins). David Wallace as curator at Independence, facing a similar need around 1960, built his staff largely from graduates of the Winterthur program. Other parks began to follow his example in seeking curators from professional training sources. By the early 1980s more than forty professional curators worked in parks, a majority on historical collections. They represented the first developing solution to the problem of providing proper collection management in parks whose interpreters lacked the time or expertise. It was a viable solution for collections requiring the full-time attention of trained curators. At the same time it raised both professional and administrative questions.

Curators trained in the several graduate programs that developed in the 1950s through the 1970s leaned to the more scholarly aspects of the profession. Park museums, whose collections and interpretive missions were centered on their sites, offered narrower opportunities for scholarship than did museums of wider scope. Broader studies comparing objects in a park collection to others of the kind might enhance the collection as an interpretive tool, but the exercise of critical connoisseurship to determine artifacts of "museum quality" was foreign to park purposes. Other pressing collection management duties had higher priority. Understandably the curators at times felt frustrated.

John Milley voiced such concern when he succeeded David Wallace at Independence in 1969. Wallace responded with a clear-sighted analysis of the situation:

> As you probably are aware I am inclined to see the Park Service curator's functions as somewhat more "technical" than "professional" in contrast to those of a scholar-curator at the Smithsonian or the American Museum of Natural History. As you have pointed out, the collections are not the park's reason for being; the park story is the collection's reason for being. . . . In this sense the Service does not and never will, I think, provide quite the same satisfactions to a curator (opportunities for on-the-job scholarship, professional prestige) that a major museum offers. The park curator's main job is to physically care for collections and he must be judged by the way he carries out this function. If he has the talent and energy to be a publishing scholar as well, so much the better, but if that is his main interest, he must give up his own time to it or get a job in a museum like the Smithsonian where the advancement of knowledge is the primary function.[67]

Nine years later curators in the North Atlantic Region, under Edward Kallop's direction, addressed the question from an organizational standpoint and produced a seminal report. The report proclaimed "a widely shared dissatisfaction among our curators regarding their place in an organization which, on the whole, has a fundamental lack of understanding of what constitutes curatorial activity . . . ." It noted that park curators faced a daunting backlog and accumulating burden of museum records, which large museums outside the Service assigned to specialists called registrars who were becoming collateral to rather than part of the curatorial profession. They were charged with routine collection care, which could be performed more economically by supervised sub-professionals. They had little time or encouragement for research to advance collection use, which demanded their professional skills and justified the collection management effort. "Out of curatorial research come perceptions that benefit interpretation," the report stated. "Exhibit ideas develop. Publications are inspired. Educational programs are generated. All add to the dissemination of knowledge, ideas, and interpretive insights about a collection and the site of which it is a part that are very much in the public interest."[68] As a park museum curator who achieved such professional goals, John Dryfhout at Saint-Gaudens National Historic Site set an example with the scholarly catalog for the National Portrait Gallery's exhibition of Saint-Gaudens portrait reliefs, handsomely published by the Smithsonian Institution. Dryfhout also earned promotion to the superintendency of the park.

The curators asked for a larger role in interpretive and exhibit planning based on collection research. They also asked for help with their sub-professional responsibilities. This request encompassed the second solution to the problem of providing adequate collection management at the park level. It involved using another series of civil service museum positions.

Classification standards for a museum specialist and technician series were issued in 1961 "to provide the technical back-up, support, and assistance necessary to managerial, scientific, and curatorial activities in museums."[69] Museum aids classified in grades 2, 3, and 4 would perform specialized tasks as helpers in the routine care of collections. They might assist with accessioning and cataloging, monitor environmental conditions and make necessary equipment adjustments, and carefully handle specimens in periodic cleaning or preservative treatment. Museum technicians in grades 5, 7, and 9 might do much of the work of collection registration and maintenance for their supervising interpreters or professional curators and serve as technical assistants for scholars researching the collection. Museum specialists in grades 9-12 included those in the new profession of conservator (treated in the following chapter), managers of large collections, and apprentice curators.

Parks began to establish positions in this series at least by 1969, when Harpers Ferry National Historical Park obtained a museum technician. Hilda E. Staubs, who had helped with the collection while a clerical assistant to the park interpreter, mastered the requirements of accessioning and cataloging, safe and secure specimen storage, preventive maintenance, and the other aspects of good collection management. By the early 1980s parks had more than sixty positions in the series. Among the incumbents, museum specialist Kathleen L. Manscill managed the collections for Great Smoky Mountains, museum specialist Allen Bohnert became collection manager and later curator at Mesa Verde, and museum technician Barbara Berosa served as registrar for Yosemite while also in demand as a collection management planner for other parks.[70]

The Service correctly estimated that these positions would double before the end of the decade and focused curatorial methods training on the incumbents. The growth in this skilled category, together with the increase in professional park museum curators, promised to solve the problem Bumpus could not foresee when he expected that park interpreters could maintain and operate their museums without specialized in-park help. Growth beyond conception at his time had made such help essential if the museums were to achieve Service curatorial standards.

NOTES

1. Lane's letter of May 13, 1918 (drafted by Horace M. Albright), called for "museums containing specimens of wild flowers, shrubs, and trees, and mounted animals, birds, and fish native to the parks . . ." (U.S. Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year Ending June 30, 1918* [Washington: Government Printing Office, 1918], p. 274; hereinafter cited as *Report of the Director for [year]*). Mather described park museums as "places to stimulate the interest of visitors . . . by the presentation of exhibits telling in a clear, consecutive way, the story of the

park from its geological beginnings through all branches of history up to and including the coming of man and his works. . . . The national parks themselves are the real museums of nature, and the park museums in each will simply serve as an index to the wonders that may be studied and enjoyed on the ground . . ." (*Report of the Director for 1925*, p. 12).

2. Merriam et al., *Reports with Recommendations from the Committee on Study of Educational Problems in National Parks, January 9, 1929, and November 27, 1929* (Washington: Department of the Interior, n.d.); "General Plan of Administration for the Educational Division," Philosophy of Interpretation 1917-47 folder, History of Interpretation to 1935 box, NPS History Collection.

3. Memorandum, Acting Director to All Field Offices, Feb. 27, 1939, Museum Policies binder, NPS History Collection; memorandum, Director to Washington and All Field Offices, Mar. 13, 1940, ibid.

4. Ned J. Burns, *Field Manual for Museums* (Washington: National Park Service, 1941), p. 102; *Museum Handbook* (Release No. 1, July 1967), Part I, ch. 1, p. 2.

5. "Proceedings of the Second Park Naturalists Conference Held at Grand Canyon National Park, November 13-17, 1940," p. 350, NPS History Collection; Burns, *Field Manual*, p. 102.

6. NPS *Administrative Manual*, Vol. IV, Interpretation, Part 5, ch. 5, p. 1; memorandum, Chief, Branch of Museums, to Chief, Master Plan Coordination, Mar. 23, 1962, Branch of Museums Dailies 1959-62 storage box, NPS History Collection.

7. Field Order 71-53, Director to All Field Offices, July 13, 1953, Exhibit History 1943-59 box, NPS History Collection.

8. Museum Prospectus, Mineral Museum, Blue Ridge Parkway, pp. 40-41, Blue Ridge Parkway box, ibid.

9. "Activity Standards, Environmental Interpretation and Supporting Activities," July 26, 1971, pp. 2-4, Museum History 1970-79 box, ibid.

10. Memorandum, Manager, HFC, to All Regional Directors, Aug. 5, 1974, Conference–Regional Curators 1974 folder, Curatorial Services Division files, Harpers Ferry; memorandum, Manager, HFC, to Regional Chiefs of Interpretation, Apr. 10, 1975, Scope of Collections folder, ibid. A June 18, 1975, memorandum from the Midwest regional director in the latter folder contains a contrary evaluation of the need. It is likely that the intellectual effort required to prepare effective scope statements in the absence of active managerial interest rather than confusion over where to place them is what delayed work on them so long.

11. Ch. V, p. 11.

12. Regional Curators Conference 1978 folder, Curatorial Services Division files, Harpers Ferry.

13. Memorandum, Director to Regional Directors and Managers, DSC and HFC, Mar. 12, 1979, Cultural Resources Conference 1979 folder, ibid.; memorandum, Director to Directorate and Field Directorate, Mar. 1, 1985, Museum History 1980– box, NPS History Collection. The directive set a deadline of December 31, 1985, for the completion of scope of collection statements and required their annual review with revision as necessary.

14. Loan and Gift Policy 1936-37 folder, Exhibit History before 1938 box, NPS History Collection.

15. 1936 Museums folder, Annual Reports, Branch of Interpretation box, ibid.

16. Loan and Gift Policy 1936-37 folder, Exhibit History before 1938 box, ibid.

17. Museum Policy binder, NPS History Collection.

18. Memorandum, Director to Regional Directors, Dec. 2, 1942, and subsequent memoranda, Museum Policy binder, NPS History Collection.

19. *Museum Handbook*, Part I, ch. 2, p. 4 (1967).

20. Memorandum, Acting Director to Regional Directors, Nov. 23, 1944, Museum Policy binder, NPS History Collection; memorandum, Director to Washington Office and All Field Offices, June 17, 1953, Field Orders 1950-69 storage box, ibid.

21. Report, Conference of Regional Museum Curators, Sept. 13-18, 1964, Regional Curators Conference 1964 folder, Curatorial Services Division files, Harpers Ferry.

22. Illustrations in *Museum Handbook*, Part I, Appendix C, pp. 1-2 (1967).

23. "Proceedings of the Second Park Naturalists Conference," pp. 148-49; memorandum, Director to All Field Offices, Jan. 31, 1941, Museum Memos 1941-42 folder, Exhibit History 1939-42 box, NPS History Collection.

24. The painting of Benjamin Franklin, donated by ex-president Harry S Truman, was shipped via Railway Express insured for $20,000. The Service scurried to obtain a donation from Eastern National Park and Monument Association to reimburse the shipper. Accession File folder, Acc. #77, Independence National Historical Park.

25. *U.S. Code Congressional and Administrative News* (St. Paul: West Publishing Co., 1955), pp. 2307-08; Public Law 84-127, U.S. *Statutes at Large* 69: 242.

26. An example was the multi-specimen swap triggered by the availability of a rare set of gauges used in manufacturing the Model 1841 Harpers Ferry rifle, ideal for exhibiting in the Master Armorer's House at Harpers Ferry National Historical Park.

27. Memorandum, Chief, Branch of Museums, to Regional Director, Northeast Region, Jan. 7, 1964, with copies of agreement and inventory, Branch of Museums/Museum Operations Dailies August 1962–December 1966 storage box, NPS History Collection. The consultant had a stake in the sound development of both projects.

28. Report, Conference of Regional Museum Curators, Feb. 9-20, 1959, pp. 8-11, Regional Curators Conference 1964 folder, Curatorial Services Division files, Harpers Ferry. Regional Curator Newell Joyner contributed particularly to the clearinghouse discussion.

29. Field Order 2-61, Acting Director to All Field Offices, Apr. 3, 1961, Field Orders 1950-69 storage box, NPS History Collection; *Museum News* 39, no. 9 (June 1961): 5; memorandum, Acting Regional Director, Region Two, to Director, June 5, 1962, Midwest Region folder, Branch of Museums General Files storage box, NPS History Collection.

30. Report, Conference of Regional Museum Curators, 1959, pp. 5-8.

31. Memorandum, Chief, Museum Services, to Manager, HFC, May 15, 1978, Clearinghouse folder, Curatorial Services Division files, Harpers Ferry; memorandum, Deputy Manager, HFC, to Chiefs, Museum Services and Reference Services, July 9, 1980, ibid.; Manager, Chief, Museum Services, to Manager, HFC, July 23, 1981, ibid.

32. Reports of Field Naturalist folder, Russell Museum Planning 1929-35 box, Richard W. Russell Personal Files.

33. "Proceedings of the First Park Naturalists' Training Conference Held at Educational Headquarters, Berkeley, California, November 1 to 30, 1929," p. 88, Interpretive Conferences 1929-58 box, NPS History Collection.

34. Reports of Field Naturalist 1929-31 and Fall 1932 folders, Russell Museum Planning 1928-33 box, Richard W. Russell Personal Files.

35. Copy in Museum Policies binder, NPS History Collection.

36. Region One Circular, Feb. 14, 1950, Supply and Equipment Program files, Curatorial Services Division files, Harpers Ferry.

37. Museum Division monthly report, November 1940, and Museum Branch monthly report, December 1955, Monthly Reports, Museum Division box, NPS History Collection; memorandum, Chief, Division of Interpretation, to Chief, Branch of Personnel, Jan. 19, 1956, Reclassification of Chief, Museum Branch folder, Exhibit History 1943-59 box, ibid.

38. Fox's availability was fortuitous. She had moved to Washington with her husband, a State Department employee. Charles Nagel, former director of the Brooklyn Museum and Park Service collaborator on the Independence Hall furnishings committee, had also come to Washington as founding director of the National Portrait Gallery. When she sought a job, he commended her to the Museum Branch. She resigned to accompany her husband to his new post in London.

39. Having worked with the combined accession-catalog numbers frequently used in art museums, Fox concurred somewhat reluctantly in the separate numbers. *Museum Registration Methods*, then awaiting publication by the American Association of Museums, would recommend use of the three-part combination accession-catalog number, so the Service's decision to keep its simpler numbering required justification.

40. The *Museum Records Handbook* later became Part II of the *Museum Handbook*.

41. When Yosemite hired a full-time curator in 1959 to make a late start on its museum records, for example, Region Four let Abel transfer to the Western Museum Laboratory and did not refill the position.

42. In Region One the million-specimen collection at Ocmulgee, cataloged to older standards, seemed safe to postpone until other collections at greater risk were properly recorded. At Fort Laramie in Region Two the staff faced years of work to catch up on record backlogs without addressing imminent large accessions from additional excavations. The contract archeologist in charge of the Wetherill Mesa project at Mesa Verde declined to record the massive new collections under the new system despite the Region Three curator's request, leaving a major task for later park curators. In Region Four Yosemite's new park curator, Coyt Hackett, enlisted park wives for a cataloging team, but progress declined when hiring them proved contrary to regulations. The Edison sites presented a formidable challenge in Region Five.

43. Memorandum, Acting Chief, Division of Interpretation, to Regional Directors and Superintendent, NCP, Dec. 9, 1959, Branch of Museums Dailies 1959-62 storage box, NPS History Collection; memorandum, Chief, Division of Interpretation, to Regional Directors and Superintendent, NCP, May 24, 1961, ibid.

44. Memorandum, Chief, Branch of Museums, to Director, July 22, 1963, ibid.

45. Report, Conference of Regional Museum Curators, 1964, Part 1 and Attachment 2.

46. Ibid., Attachment 3. Later developments in archeological practice away from culling would require further changes in recording.

47. Memorandum, Chief, Branch of Museum Operations, to Chief Curator et al., May 19, 1965, Branch of Museums/Museum Operations Dailies August 1962–December 1966 storage box, NPS History Collection.

48. Memorandum, Assistant Chief, Branch of Museum Operations, to Chief, Branch of Museum Operations, Feb. 12, 1969, Harpers Ferry Museum Support Facility June 1968–June 1969 binder, ibid.

49. Memorandum, Chief, Branch of Museum Operations, to Chief, Division of Property Management and General Services, Apr. 19, 1973, NPS Archives Acc. No. 31 storage box, ibid.

50. Report of Field Naturalist-Museum Advisor for October 1929, Russell Museum Planning 1928-33 box, Richard W. Russell Personal Files.

51. Check List for Museum Planning folder, Exhibit History 1943-49 box, NPS History Collection.

52. Ralph H. Lewis, "Reexamination of the Museum Phases of Mission 66," June 22, 1960, draft in Museum History 1960-69 box, ibid.; memorandum, Chief, Branch of Museums, to Chief, Division of Design and Construction, Nov. 7, 1960, Branch of Museums Dailies 1959-62 storage box, ibid.; memorandum, Chief, Division of Interpretation, to Regional Directors et al., Dec. 30, 1960, ibid.; Report, Conference of Regional Museum Curators, 1964, p. 4.

53. "Proceedings of the First Park Naturalists' Training Conference," pp. 73-75.

54. "Miscellaneous Products Available to National Parks and Monuments from Western Museum Laboratories," WML WPA Prop. Products Cat. box, NPS History Collection.

55. *Field Manual for Museums*, pp. 95-100.

56. Appendix G, Museum Specimen Storage Equipment, Amendment No. 7 to Vol. 25, Information and Interpretation in the Field.

57. All-steel construction was chosen out of consideration for long-term availability, even though heat would penetrate it more rapidly in case of fire. The branch decided to accept the risk and warn parks to compensate for it in fire protection planning. The polyurethane gaskets, supposedly more durable and environmentally safe than rubber, deteriorated after a few years. By 1981 Donald Cumberland secured manufacture of a synthetic rubber gasket as a replacement.

58. Between closure of the Western Museum Laboratory in 1968 and activation of the Harpers Ferry Center laboratory in 1970, employees transferred from San Francisco to Harpers Ferry built and crated a modest stock of gun and sword racks for park museums.

59. Letter, Chief, Branch of Museums, to Nathan Stolow, Aug. 15, 1962, Branch of Museums/Museum Operations Dailies August 1962–December 1966 storage box, NPS History Collection; memorandum, Chief, Branch of Museums, to All Regional Directors, Mar. 22, 1963, ibid.; Report, Conference of Regional Museum Curators, 1964, Attachment 5.

60. Memorandum, Assistant Director, Operations, to All Regional Directors, Apr. 9, 1965, Branch of Museums/Museum Operations Dailies August 1962–December 1966 storage box, NPS History Collection; *Museum Handbook* Part I, ch. 4, pp. 11-19 (1967). Later in 1967 Ralph Lewis participated in a conference of the International Institute for Conservation of Historic and Artistic Works focusing on museum climatology, bringing the branch into touch with current developments.

61. When the Museum Branch needed to fumigate larger objects such as furniture it secured the cooperation of the National Archives, which had a large vacuum fumigation chamber and would add Park Service artifacts to a partial load of documents being treated. The vacuum enabled the gas to penetrate deeply into internal spaces where pests might lurk. The branch encouraged park museums to seek similar arrangements with nearby hospitals or other operations performing vacuum fumigation. In the mid-1970s the Division of Museum Services designed and built a small chamber, possibly adaptable to park museum use, permitting fumigation under vacuum or elevated pressure and temperature.

62. R. L. Ruke, "Hazard Evaluation and Technical Assistance Report, Harpers Ferry Center Museum Laboratory," 1977, Curatorial Services Division files, Harpers Ferry.

63. The living history programs enthusiastically adopted by many parks during the 1960s and 1970s proceeded largely apart from their museum exhibits, tended to lack curatorial input, and sometimes used original objects in damaging ways. Protests led by the Division of Museum Services resulted in requirements that reproductions be used for virtually all utensils, tools, furnishings, and costumes in such programs.

64. U.S. Civil Service Commission, *Position Classification Standards, Museum Curator Series, GS-1015*, February 1962. Treva Burd, a Park Service personnel officer, contributed particularly to the inclusion of park museum considerations.

65. Memorandum, Chief, Branch of Museum Operations, to Chief, Division of Interpretation and Visitor Services, Dec. 30, 1965, Branch of Museums/Museum Operations August 1962–December 1966 storage box, NPS History Collection.

66. Report, Conference of Regional Museum Curators, 1964, Attachment 18.

67. Letter, Wallace to Milley, June 27, 1969, Harpers Ferry Museum Support Facility Daily File 1968-69 binder, Museum Dailies storage box, NPS History Collection.

68. "Evaluation of the North Atlantic Region's Curatorial Activity and Personnel Needs," June 1978, pp. 1, 11, North Atlantic Region folder, Curatorial Services Division files, Harpers Ferry.

69. U.S. Civil Service Commission, *Position Classification Standards, Museum Specialist and Technician Series, GS-1016*, December 1961.

70. Bohnert, professionally trained in the Texas Tech University museum program and at the Carnegie Museum of Natural History, later succeeded Edward Jahns as Rocky Mountain regional curator.

CONSERVATION OF CULTURAL AND SCIENTIFIC OBJECTS

In creating the National Park Service in 1916, Congress directed it "to conserve the scenery and the natural and historic objects and the wild life" in the parks.[1] The Service therefore had to address immediately the preservation of objects placed under its care. This chapter traces how it responded to this charge during its first 66 years. Those years encompassed two developmental phases of conservation practice, one largely empirical and the other increasingly scientific. Because these tended to parallel in constraints and opportunities what other agencies found possible in object preservation, a preliminary review of the conservation field may clarify Service accomplishments.

Material objects have inescapably finite existence. All of them deteriorate by the action of pervasive external and internal agents of destruction. Those we wish to keep intact for future generations therefore require special care. They must receive timely and proper protective, preventive, and often restorative attention. Such chosen objects tend to become museum specimens to ensure them enhanced protection.

Curators, who have traditionally studied and cared for museum collections, have provided the front line for their defense. In 1916 they had three principal sources of information and assistance on ways to preserve objects. From observation, instruction manuals, and formularies, they could borrow the practices that artists and craftsmen had developed through generations of trial and error. They might adopt industrial solutions, which often rested on applied research that sought only a reasonable durability. And they could turn to private restorers who specialized in remedying common ills of damaged antiques or works of art. Although these skilled craftsmen and artists could often mend and refinish with cosmetic success, what they did to improve the appearance or utility of an object frequently impaired its historical integrity and future conservation.[2]

A profound change in the approach to object conservation took root in a few centers before World War II. In 1929 the Fogg Art Museum at Harvard set up what soon became the Department of Conservation and Technical Research. Edward W. Forbes, the museum director, staffed the department with a chemist and an x-ray specialist as well as an art historian. In 1932 it began publishing a scholarly journal, *Technical Studies in the Field of the Fine Arts*, which continued through ten volumes before the war terminated publication. This reported scientific studies of artists' materials and techniques, the causes and products of deterioration in paintings and other works of art, and new materials and methods to prevent or correct damage to these objects. The department's students found

employment as art museum directors, curators, and a new breed of specialists who came to be called conservators. The latter, few in number, were the first scientifically trained practitioners of object conservation in America.

By the end of World War II numerous art museums must have known of the Fogg's pioneering work but few had been able or willing to embrace it. Museums of art, science, and history tended to operate in separate spheres with little intercommunication. Many art museums continued to place their trust in restorers who clung to traditional empirical treatments. Some art experts relying on aesthetic judgment questioned or bitterly opposed the scientific findings. The high costs of equipping and staffing adequate conservation laboratories deterred many museums. The consequent lack of demand for trained conservators tended to dry up the meager sources for training.

Scientific conservation continued to grow nevertheless. In 1950 members of the original Fogg program joined with staffs of similar laboratories and individuals imbued with the same concerns to organize the International Institute for Conservation of Historic and Artistic Works (IIC) headquartered in London. Subsidiary national groups formed under its wing in many countries. IIC proved an effective means to stimulate continued research and training. It set standards for the new profession and multiplied the amount and availability of technical information. The American group initiated a code of ethics in the early 1960s that emphasized the profession's basic tenet: "unswerving respect for the aesthetic, historic and physical integrity of the object."[3]

Training for conservation came to mean several years of rigorous graduate study and internship or the equivalent in apprenticeship under a master conservator. Formal training of this scope became available again in the United States beginning in 1960.[4] The principal centers focused on fine arts conservation, although museums also needed scientifically trained conservators of more mundane cultural objects and even natural history specimens. If one wished to become a qualified conservator of such material the pathway remained less clear until the 1980s, when training programs for work on library materials, anthropological specimens, architecture, and other specialties began to take shape.

Conservators needed to perform three well-defined functions: examining objects to confirm and record their significance, original composition, and condition; preserving objects by environmental control or treatment to prevent or decelerate continued deterioration; and restoring objects when necessary to make them understandable with minimum loss of integrity.[5] In so doing they had to work in close collaboration with two other kinds of experts. Curators possessing thorough knowledge of the nature, significance, and context of objects needed to define the specific goals for their

conservation. Conservation scientists had to analyze and test materials, environmental influences, and procedures to establish the appropriateness and adequacy of treatment. As conservation scientists continued to refine the materials and methods for treatment, trained conservators inevitably applied ones that were later superseded by others better protecting the integrity of the objects.

The Empirical Phase, 1916–1948

As was true in museums outside the parks, object conservation in the parks during this period tended to apply practical methods based on everyday experience and observation rather than scientific analysis. The Park Service director's first annual report to the secretary of the interior in 1917 noted two urgent conservation situations that illustrate the point.

One involved a collection of deteriorating totem poles at Sitka National Monument. These striking objects, significant as documents of native culture, were the primary visible resource attracting visitors to the park. The Service obtained $1,000 in its 1918 appropriation to appoint a Sitka resident as monument custodian and have him treat the poles. Over several years decayed wood was chiseled out and replaced with new cedar, and new paint was applied. "It is anticipated that when these repairs are completed the poles will be preserved permanently, or at least that heavy repairs will be rendered unnecessary for many years," the director's 1926 report declared. The old poles nevertheless deteriorated beyond repair by 1940, when CCC workers carved reproductions incorporating bits of the old ones.[6]

A Canadian crew, faced with the same basic problem during the 1920s, analyzed the need more scientifically. They developed a procedure for reinforcing original totem poles, using tested wood preservatives, isolating untreated old wood from contact with the soil, sealing it, and finally painting it in close consultation with knowledgeable natives to match original colors. Poles decayed beyond repair were carefully taken down and protected from further weathering. In 1931 the National Museum of Canada published a description of the process that the Park Service reprinted ten years later in its *Field Manual for Museums*.

Response to the second conservation need cited in the director's 1917 report was also empirical but reflected more interest in scientific guidance. At El Morro National Monument both vandalism and weathering threatened the inscriptions carved in a sandstone outcrop by passing travelers of preceding centuries. As common-sense preventive conservation, the Service installed fencing and protective plantings to deter modern visitors from adding to the incised record. These and other measures did not protect the inscriptions from the weather, and in 1920 the Service sent a block of the

sandstone to the National Bureau of Standards for experimental treatment. Scientists there tried to impregnate the stone with some binding agent, but the binders penetrated only a short distance. Because the artificially consolidated outer layer expanded and contracted with temperature changes at rates different from the underlying rock, it tended to spall off in chunks.

Concern with object conservation necessarily increased with the rapid growth of the national park system and its museum program in the 1930s. Early in 1935 the Field Division of Education at Berkeley issued Museum Preparation Memorandum No. 1, which pointed out the importance of counteracting rapid deterioration in specimens and getting them stabilized. It offered no hands-on assistance from the division but recommended two recent, inexpensive publications containing sound, scientific guidance in object conservation. *The Preservation of Antiquities* by Harold J. Plenderleith of the British Museum Laboratory provided clear descriptions of materials commonly found in the composition of ancient artifacts, the nature of their deterioration, and practical methods of cleaning and preservative treatment the laboratory had developed and tested. The 1929 annual report of the National Museum of Canada contained a paper by Douglas Leechman giving comparable information for anthropological museum specimens of North American origin.[7] Carl Russell probably had copies of both sent to all parks, which could not have found better instructions at the time.

This infusion of scientifically based technical information contributed directly to specimen treatment in some parks. When Jean (Pinky) Harrington took charge of the nascent historical archeology projects at Colonial National Historical Park in 1936, he set up a laboratory to clean and treat the vast number of artifacts being recovered (Chapter One). Perhaps the most sophisticated procedure employed there involved the iron objects. Supervised CCC enrollees hand-cleaned these heavily rusted specimens, wrapped them in strips cut from sheet zinc or covered them with the more expensive granulated zinc, and immersed them in dilute sodium hydroxide for hours or possibly days. An electrochemical reaction generated hydrogen, reducing the rust to iron. The specimens then required thorough washing, perhaps brushing, and oven drying before being coated with melted paraffin. A published account of the Jamestown laboratory's procedures cited the Plenderleith and Leechman instructions as the principal sources.[8]

Another example of their influence occurred nearby. In 1937 Paul Hudson, the park curator at George Washington Birthplace National Monument, prepared excavated brass artifacts for exhibition by cleaning them with 10% acetic acid to remove surface corrosion and coating them with celluloid dissolved in acetone. These methods came directly from Leechman's paper. Because Hudson and other park staff who applied the

newly available information were untrained in scientific conservation, their use of the techniques remained empirical.

The same scientific publications also influenced thinking at higher levels in the organization. In a December 1936 report Ned Burns restated Service responsibility to preserve objects of scientific or historic value related to the parks. "These specimens require professional attention for their repair, cleaning and preservation in accordance with the most modern methods . . . ," he wrote. "Unless constant protection is provided by skillful and experienced technicians serious loss and irreparable damage will result through their deterioration." Such technicians scarcely existed at that stage, however, forcing Burns to rely on exhibit preparators in the museum laboratory whose manual skills he trusted. In 1937 he had an exhibit artist from the laboratory restore murals at Arlington House probably originally executed by George Washington Parke Custis. The paintings restorer then working at Morristown National Historical Park was doubtless equally ignorant of the new standards for such work developed at the Fogg Museum. In 1938 Burns detailed one of his preparators to instruct and supervise CCC enrollees at Cacapon State Park, West Virginia, in cleaning and restoring 175 antique specimens of various kinds.[9]

Scientific procedures, on the other hand, characterized Burns' response to another conservation challenge. In June 1935 two Mammoth Cave National Park guides discovered the mummified body of a pre-Columbian Indian some two miles within the cave. The park exhibited the body near the discovery site in an available showcase. In about two months mold was apparent on the mummy's skin. Burns reasoned that the immediate cause involved the old showcase. Turning on its lights warmed the enclosed air, accelerating mold growth. The air cooled and contracted when the lights were off, sucking in more damp cave air, which also favored mold. But why had the body not decayed in the cave's moist atmosphere? The cave's history had demonstrated the presence of saltpeter in the sediments that had washed into the underground passages. Chemical analysis revealed the nitrate in the sand on which the mummy had lain and in body tissues as well. Burns theorized how the infusion might have occurred and devised a corrective treatment.

First he cleaned away the surface mold using a soft brush, selected solvents, and the assistance of one of his exhibit preparators. Then he had the mummy placed in a tight wooden box. Within the box it rested on a wire mesh shelf above ten pounds of dehydrated calcium chloride. By blowing warm, dry air through the box he dried out the body enough to inhibit continued growth of the mold without attendant damage. Then he impregnated it with a fungicide, thymol dissolved in alcohol. Meanwhile he ordered a new table case manufactured to exact specifications. Its unique feature was a shallow drawer beneath the case floor to hold calcium

chloride for dehumidifying the air in the case and thymol to kill any mold that recurred. The drawer automatically opened or closed a tight-fitting trap door in the floor of the case as it slid in or out. Burns carefully positioned the mummy in the case, charged the drawer with its chemicals, and instructed the park staff to keep them replenished.[10]

When Mammoth Cave National Park a few years later became concerned about the condition of the historic saltpeter vats in the cave, it turned again to the Museum Division for advice. Burns arranged to have selected samples of the old wood analyzed by the Agriculture Department's Bureau of Chemistry and Soils as the first step in planning proper treatment.[11] A second Museums Association booklet by Harold Plenderleith, *The Conservation of Prints, Drawings, and Manuscripts*, had alerted him to scientific developments in paper conservation. To inform those park museums having manuscripts on display he quoted at length from this publication in the Museum Division's monthly report for January 1940. The March 1940 report showed him also well aware of progress being made in document care by the National Archives. From this report parks learned that the Archives would, upon specific request from the director, laminate in cellulose acetate significant historic documents from park collections. Lamination represented a line of conservation research largely distinct from what came out of the scientific laboratories of the Fogg and a few other art museums. As host to the Park Service engineering laboratory for a few years just before World War II, the Museum Division also kept in touch with its research on conservation of building materials.

Empirical treatment of museum objects nevertheless remained the norm. The Service in 1940 received for the Lincoln Museum the objects used as evidence at the 1865 trial of the assassination conspirators, including Booth's murder weapon, his telltale diary, the leather boot Dr. Samuel Mudd had cut from his broken leg, and the various guns and knives carried by his accomplices. Exhibit preparators in the Museum Division laboratory cleaned the items, which had lain secure in a Treasury Department vault since the trial, and applied any preservative treatment that seemed necessary to ready them for exhibition. Six months later Salem Maritime National Historic Site sent to the Museum Division a parchment stencil and other items that Nathaniel Hawthorne had used as an official in the Salem Custom House. Again the preparators cleaned and repaired the specimens for display.[12]

Often curators applied preservative techniques, likewise empirically rather than scientifically. Late one afternoon in 1941 Ralph Lewis checked on some matter in the Lincoln Museum vault and found the uniform of Major Henry R. Rathbone, a guest of the Lincolns at Ford's Theatre, heavily infested with clothes moths. Seeing the infestation as a conservation emergency, he promptly carried the uniform upstairs to the empty

laboratory, soaked it thoroughly with carbon tetrachloride, and hung it to dry overnight. His choice of treatment typified empirical conservation. The chemical was at hand, not yet outlawed because of its toxicity. Lewis knew it was used for insecticidal fumigation in combination with another chemical. Dry cleaners also used it, so it should not damage the textile. In this instance the treatment eliminated the infestation without apparent side effects in spite of inadequate analysis.[13]

Clearly understanding the need curators and preparators untrained in conservation had for better empirical guidance, Ned Burns devoted more than a quarter of the *Field Manual for Museums* to a Technical Methods chapter. The introductory paragraph on cleaning and preservation stated the importance of approaching these tasks scientifically: "It is essential to know, first, the physical and chemical properties of the objects to be cleaned . . . . The chemical nature of the material to be preserved as well as the composition of foreign substances to be removed should be determined by tests to avoid mistakes in treatment."[14] The chapter said little more about how to make or obtain such analyses, for which few museums in or out of the parks had proper means. What it did supply were brief, clear instructions and precautions curators or preparators should follow in treating the principal kinds of specimens. It concluded with a useful glossary of the materials museums used in preparing and preserving objects. About as soon as the *Field Manual* made these empirical data readily available, Burns started drafting a handbook for the Committee on the Conservation of Cultural Resources as it prepared American museums to protect their collections under wartime emergencies (Chapter Three).

The Service museum program had not yet really crossed the threshold from empirical to scientific conservation, as revealed by its efforts to cope with the Gettysburg cyclorama. This huge painting depicting the battle of Gettysburg had been on view in Gettysburg for many years before the Service acquired it in 1942. The simple building that housed it lacked the means for proper climate control and was penetrated by driving rains. The artist's canvas, heavy with paint and hanging from its upper edge, had weakened with age. Grime dimmed the painted surface. Burns inspected the acquisition and advised the park to do what stabilizing it could with its own employees, but he suggested no specific measures.

After the war the Service's 1948 appropriation included $10,000 for conservation of the cyclorama, and Burns took prompt action. The critical changes in painting conservation techniques emanating from the Fogg Museum had evidently not captured his attention. Instead he worked out contract specifications with Carlo Ciampaglia, a New York muralist. Ciampaglia and a few assistants washed the painted surface of the cyclorama with soap and water and glued a horizontal strip of new canvas to the back as an attachment for added support.[15] This treatment involved

risks to the painting that scientific conservators would have avoided. About this time Yosemite National Park engaged a San Francisco restorer to work on some of its fine paintings. Also of the old school, he practiced reforming varnish coatings and other methods outdated by the research at Harvard and elsewhere.

The Scientific Conservation Phase, 1949–1982

Within the Park Service archeologists working in the Southwest, perhaps Charlie R. Steen in particular, first realized the importance of conservation based on scientific principles. Concerned about the continued deterioration of wall paintings and plaster in the old mission church at Tumacacori National Monument, Steen contacted the Fogg Museum for advice. R. John Gettens, the museum's chief of technical research, visited Tumacacori in June 1949 to study the materials and conditions involved. Back at his laboratory Gettens formulated a synthetic resin designed especially to spray-coat the friable paint and plaster and detailed a three-step treatment park staff members might safely apply. They were to remove most of the disfiguring dust, adobe drip, and bird droppings by careful brushing, fix the surface with a light spraying of the synthetic resin, then point the broken plaster edges.[16]

Steen's initiative apparently led the Service to seek more information about the work going on at the Fogg. While negotiations were in progress for the Tumacacori consultation, Superintendent Edwin W. Small of Salem Maritime visited the museum and met Gettens. "He is very much interested in the subject of establishing professional standards for people engaged in the conservation of the objects of art and archaeology . . . ," Small wrote Chief Historian Ronald Lee. "I look forward to having him visit Salem and the Adams Mansion and appraise our needs . . . ."[17]

Burns must have wasted little time at that point in beginning the steps necessary to establish a position in the Museum Branch for a Fogg-trained conservator. Harold Peterson, who became a staff curator in the branch in 1947 and who had a particular interest in the preservation of historic weapons and related objects, surely supported this course. Peterson learned all he could by observation, reading, discussion, and experiment, then applied treatments with care while critically appraising the results. He personally cleaned and gave preservative treatment to some specimens for park exhibits under construction, but his informed interest in such matters became more obvious in 1949 during the first Museum Methods Course (Chapter Four). Under his watchful eye trainees and also fellow instructors learned to remove corrosion from gun barrels without scratching the underlying surface. He taught them to pick rust from pits with pointed

wood sticks and never to use such shortcuts as buffing wheels and power brushes.

Peterson's concern for proper conservation of park museum specimens reinforced Burns' sense of how critical the problem had become. A request soon went out from Washington headquarters for specific information on cultural objects in urgent need of preservative action. A response filled with photographs of deteriorating specimens in the eastern parks in August 1949 provided the Museum Branch with good support for a renewed appeal to fund object conservation, and the 1951 fiscal year appropriation included money for the purpose. Meanwhile, Colonial National Historical Park reactivated its archeological laboratory and resumed the electrochemical reduction and paraffin coating of excavated iron during the summer of 1949. To help support the laboratory the regional office urged parks to send specimens of this type to Jamestown for treatment at a cost of fifty cents to two dollars per object.[18]

The Museum Branch demonstrated its growing awareness of higher conservation standards when it installed the exhibits for the new William H. Jackson wing of the Scotts Bluff National Monument museum in the late summer of 1949. Most commercially available matboard had a cheap paper core sealed front and back by thin layers of high-grade paper. Acid content of the core paper could reach and damage the art mounted in the mat through the cut edges of the mat window. Only a few manufacturers supplied matboard composed throughout of 100% rag stock virtually acid-free. The branch specified the use of all-rag mats when it ordered Jackson's sketches matted and framed for the exhibits. When the framed pictures arrived at the park on the verge of the museum opening, however, they had ordinary mats. The branch rush-ordered matboard of the specified quality, and Robert Scherer, a highly competent preparator, rematted the sketches after the opening ceremony.

In the fall of 1950 Burns tried to recruit John Gettens for his conservation position. Gettens accepted another offer from the Freer Gallery of Art but recommended two of his Fogg Museum colleagues. Burns selected Elizabeth H. Jones, who entered on duty the following May after the branch converted the largest, lightest office in its dingy, parking-garage laboratory to a paintings conservation studio for her use. She initiated the practice of surveying and recording the condition of paintings in park collections to select the pictures in most critical need. She brought to the Park Service the technique of "facing" deteriorating oil paintings before moving them to the laboratory and specified the design for packing boxes to transport paintings safely. In the studio she patiently applied the delicate processes of cleaning, relining, and restoring as needed with consummate skill.

Performing such painstaking work with grace and proficiency, Betty Jones introduced the branch staff to new standards in the practice of object

Elizabeth H. Jones. The Park Service's first professionally trained conservator. (Courtesy Harvard University.)

conservation. Although she had moved from an art museum environment of fine paintings chosen for aesthetic merit to one in which historical values predominated, she showed equal respect for the integrity of the original works and the same degree of care in examining and treating them. Most of her time went toward the examination and treatment of paintings from Independence National Historical Park and Adams National Historic Site for which the Service felt particularly urgent concern. She had made impressive progress when she returned to the Fogg Museum as its chief conservator in June 1952.[19]

Upon Jones' recommendation, the Museum Branch appointed Walter J. Nitkiewicz as her replacement. He had not trained at the Fogg Museum but had completed under Alfred Jakstas a thorough apprenticeship in art conservation as practiced there.[20] Continuing the knowledgeable examination and treatment program Jones had begun, he remained the staff paintings conservator for the branch and its successors until his death in 1979. The focus of his duties was easel paintings, of which there were more than enough in park collections to keep a single conservator continuously busy.

The necessity to provide conservation of comparable standard for other kinds of cultural objects became apparent even before Jones' appointment, although no pool of formally trained conservators for such artifacts yet existed. Harold Peterson knew that the electrochemical treatment being

Walter J. Nitkiewicz. Park Service fine arts conservator.

used at Jamestown failed to a degree for iron artifacts exposed to salt water, and he had heard of Service archeologists losing some key objects of wet wood or leather that required specialized treatment immediately upon excavation. Upon his urging, the Museum Branch secured the hiring of Harry Wandrus as a full-time conservator assigned to the Jamestown archeological laboratory in April 1951.

Peterson had become acquainted with Wandrus while a graduate student at the University of Wisconsin. The young man had some grounding in chemistry. He was a discriminating arms collector practicing safe, effective ways to clean, restore, and preserve the objects he collected. He could handle machinery. At Jamestown he increased the laboratory's productivity while widening the range of specimens treated. His experiments with an Army field method for rust removal from weapons and equipment using acid demonstrated possibilities for its safe application in the laboratory. He sent his report to Ned Burns along with a sample of the new vapor-phase rust inhibitors he thought might find use in park collections.[21]

The temporary laboratory structure at Jamestown had to come down to make way for the permanent facilities that would mark the 350th anniversary of the Virginia colony, and Wandrus was transferred to the Museum Branch in Washington by early 1954. Setting up shop at the branch's museum laboratory (then in Temporary Building S on the Mall), he became its staff conservator for objects outside Walter Nitkiewicz's area of specialization. Here he faced a considerably wider variety of specimens in need of expert conservation, requiring him to expand his knowledge and skills.

Harry Wandrus. Park Service objects conservator.

In March 1954, for example, the laboratory had four Civil War flags, each unique in various ways, to clean and restore for exhibition. Fragile and sensitive to photochemical deterioration, they called for delicate handling in a sequence of exacting procedures. For help with these the branch turned to the Textile Museum of the District of Columbia. This small, specialized institution had emphasized scientific concern in the care of its collections and practiced well-considered ways of cleaning, repairing, and mounting specimens. Textile Museum staff visited the laboratory to examine the flags and suggest suitable methods for their treatment, and Wandrus attended an intensive three-day course at the museum on scientific cleaning procedures. He then proceeded to wash, restore, and mount the flags with guidance from its staff. From this beginning he developed his knowledge of conservation techniques for historic flags until his advice and help became widely sought.[22] Other textiles on which he worked included the Washington tents for Colonial National Historical Park and a 17th-century ecclesiastical stole, which he had the Textile Museum staff clean and repair before he devised a secure mounting.

March 1954 also saw a 19th-century carriage, which had been donated to Hampton National Historic Site, moved bodily into the laboratory for Wandrus to restore. Because horse-drawn vehicles and their accouterments were historically associated with many parks and required specialized historical knowledge, the Museum Branch engaged Paul H. Downing to

advise on the recurring problems of identification, evaluation, conservation, and interpretation of such objects.[23] Downing, who was guiding similar work at Colonial Williamsburg, specified the desired results of the carriage's restoration, directed Wandrus to the authentic materials required, and explained techniques carriage makers had historically employed. He did not believe that modern spray applications of paint and varnish, for example, could accurately replicate the original appearance. Work on this specimen, extending over two and a half years, provided a valuable learning experience for the conservator and set a restoration standard for vehicles in Park Service custody.

Other materials also demanded the conservation skills Wandrus was maturing. When Pinky Harrington discovered at Fort Necessity National Battlefield the location and ground plan of George Washington's short-lived field fortification, some of the long-buried stockade post stubs required prompt conservation. Wandrus chose alum impregnation as the surest, most practical method then available. The laboratory lacked the necessary equipment but he quickly improvised heaters and containers for prolonged immersion of the wood in hot alum solution, with satisfactory results.

This treatment would not do for the massive timbers uncovered by archeologists at Fort McHenry in 1958. They had supported the flagpole during the bombardment and were the only tangible remains at the fort so closely associated with the star-spangled banner of the national anthem. Sharing the early interest in polyethylene glycol as a preservative for waterlogged wood, Wandrus began studied application of this hygroscopic wax to the timbers in November 1958 and watched the effect of repeated treatment as incipient cracks closed and the wood resisted shrinkage or warping.[24] Before epoxies came into use to consolidate seriously decayed wood, Wandrus also experimented with soluble nylon as a consolidant in restoring an unusual ammunition cart from Morristown, although he later abandoned its use because of its aging characteristics. The collection of river boats he treated at Grand Canyon National Park required still other techniques.

Metal conservation remained the center of Wandrus's professional concern. In 1954 he checked all the specimens in the Fuller arms collection (Chapter Seven) and treated those exhibiting active deterioration. He repeated the inspection and needed treatments on an approximately annual schedule for years thereafter. Also in 1954, he carefully de-rusted and applied protective coatings to a substantial collection of architectural ironwork at the Jefferson National Expansion Memorial and conserved a recently excavated 16th-century sword for the state of New Mexico. His 1956 assignments included preservative treatment of arms and armor for Colonial National Historical Park and San Juan National Historic Site. The next year enough excavated iron awaited cleaning to warrant reassembly of

the former Jamestown laboratory equipment in his Washington shop. Conservation of the iron balcony railing at Congress Hall in Independence National Historical Park required his attention in 1961.[25]

Wandrus trained coworkers to assist in conservation and continually worked to improve his own technical knowledge and skills. He personally bought and studied at home the technical publications most pertinent to the problems he faced at work. He conferred with other conservators when possible and attended professional conferences. Before his untimely death in November 1965 he had become widely known and respected in the growing community of professional conservators. His influence on the collections in national park museums continued through the labors of the successor he had nurtured and the substantial technical library he donated to the Park Service.

Walter Nitkiewicz's basic task of caring for the easel paintings in park collections suffered interruption in 1955 when the Old Courthouse rotunda at Jefferson National Expansion Memorial underwent restoration. Its upper walls, dome, and lantern carried extensive mural decorations requiring conservation. Four large historical scenes by Carl Wimar occupied lunettes around the base of the dome, and more than twenty allegorical and historical figures by Ettore Miragoli completed embellishment of the soaring space. Nitkiewicz recruited and instructed a team of local art students and artists. Under his close supervision they worked day after day on high scaffolds readhering loose paint or plaster, cleaning the grime from paint surfaces with tested solvents, in-painting where necessary, and finally applying a protective coating. The job took from April 1955 to July 1956 and cost about $45,000.[26]

Nitkiewicz's extended absence from his normal duties emphasized how understaffed the Museum Branch laboratory was for painting conservation. Anne F. Clapp, the other of the two Fogg Museum-trained conservators John Gettens had recommended six years earlier, was again available after serving as conservator for collections at the Jamaica Institute. The branch seized the opportunity to hire her in October 1956. Initially sharing laboratory facilities with Nitkiewicz, she applied her expertise in cleaning and rematting 18th-century prints for George Washington Birthplace National Monument and Colonial National Historical Park. In January 1957 her duty station shifted to a new satellite conservation laboratory at Independence where she could care for that park's extensive portrait collection and other important Service paintings in the Northeast.

Anne Clapp's equipment also permitted treatment of paper-based specimens, and she managed to include a significant amount of paper conservation in her output. A historic ceiling painting in the Senate Chamber of Congress Hall became another addition to her primary workload. Paint, plaster and ceiling supports had so deteriorated that

adequate conservation required temporary removal of the ceiling section bearing the painting. In the summer of 1959 Clapp prepared the painted surface for the rigors of moving, and Frank Phillips from the Museum Branch supervised the delicate operation of cutting out the section and maneuvering it by crane out of the building and into a workroom. There Clapp executed a thoroughly professional conservation treatment of the painting and its support. Two years later Phillips saw to the mural's return intact to its original place in the restored chamber ceiling.[27]

In 1960 Anne Clapp accepted a position as paper conservator for the Intermuseum Conservation Association, terminating the satellite laboratory in Philadelphia and leaving Walter Nitkiewicz as the Service's only fine arts conservator. Independence could fill the gap in part by sending portraits in critical need to Betty Jones at the Fogg Museum under contract. Nitkiewicz, meanwhile, had continued to shoulder special assignments. At Castillo de San Marcos National Monument in 1958 he addressed difficult problems of preserving historic graffiti on plaster walls, a severely weathered coat of arms carved in stone over a fort entrance, and carved stone fonts in the fort chapel. That summer he cleaned and restored two large landscape paintings of Yellowstone and the Grand Canyon by Thomas Moran set in the paneled walls of the secretary of the interior's conference room.

Beginning in the fall of 1959 Nitkiewicz tackled a project of extreme technical complexity that would take two-and-a-half years to complete: restoring for permanent exhibition the Gettysburg cyclorama, about 27 feet high and 353 feet in circumference. The Service was erecting a carefully sited structure designed by Richard Neutra in which to display the colossal painting properly. Because special equipment would be needed to move large sizes and weights of canvas with precision and safety in confined spaces, Nitkiewicz enlisted Henri G. Courtais as a consultant conservation engineer. He also organized a team of four assistants drawn largely from the crew he had trained for work on the courthouse murals in St. Louis.

Nitkiewicz and his crew began by facing the entire painting with squares of Japanese tissue paper to hold in place any paint that might come loose. The usual facing technique required adaptation to counteract tensions in the weakened canvas. Using a transit, they established a level line around the complete circle of painted scene that would prove vital during reinstallation. Next they cut the painting into vertical strips narrow enough to fit on the twenty-foot-wide relining table. Lowering each strip in turn face down onto the padded table, they flattened the stiff, friable canvas by painstaking application of controlled heat and moisture working from the center outward. Infusion of a gelatin size enabled them to limit penetration of the relining adhesive. Patching breaks, replacing old repairs, and removing former reinforcements followed. Stretching the linen relining

canvas called for precise teamwork by all hands as well as the use of innovative devices. After relining they turned the strip face up, removed the facing paper, and cleaned the painted surface with gauze wads and a mixture of carefully chosen solvents, wiping away the dirt from 10,000 square feet of surface without loss or damage to the paint. The final stage of mounting the strips in the new building and rejoining the cut edges along the natural curvature the hanging canvas assumed proved most difficult of all.[28]

Successful completion of the project on schedule allowed Nitkiewicz to resume his duties in the Washington laboratory. There he treated painting after painting from park collections selected on the basis of his surveys of their condition. The number of examined but untreated paintings demonstrated the urgency of continuing this work. When more special tasks again interrupted Nitkiewicz, the use of outside conservators under contract to restore easel paintings for parks required consideration.[29]

The Branch of Museums/Museum Operations in the mid-1960s was wary of contract conservation. Most of the relatively few fine arts conservators who had received thorough training in the new scientific techniques and materials worked full-time for established institutions. Moreover, no recognized certification of qualified conservators existed. The branch concluded that park museum specimens that could not wait for conservation by its staff specialists should be entrusted only to conservators specifically recommended by a fellow of the International Institute for Conservation of Historic and Artistic Works.[30]

In 1965 the Branch of Museum Operations took steps to contract with two conservators of unquestionable repute for sustained services to two or three nearby park collections. Susanne P. Sack, paintings conservator for the Brooklyn Museum (and later president of the International Institute for Conservation), agreed to conduct condition surveys at Theodore Roosevelt Birthplace and Sagamore Hill national historic sites as a start. Betty Jones of the Fogg Museum consented to survey The Wayside, Nathaniel Hawthorne's home in Minute Man National Historical Park, and the Derby House at Salem Maritime. After submitting reports the following spring, both women received contracts for conservation treatment. To this extent the trial proved successful and instructive, but fluctuations in branch funding and contractors' priorities prevented long-term maintenance of the arrangements.

The Museum Branch also needed to augment its object conservator manpower. Part of the overload facing Harry Wandrus consisted of specimens sent from the Western Museum Laboratory for preservative treatment and perhaps restoration before being mounted in exhibits. The western laboratory lacked a staff conservator and at the time could hardly expect to find a properly trained one. Having to ship objects back and forth

across the country delayed exhibit production and exposed the specimens to increased risk.[31] In 1960 the Museum Branch recruited and crash-trained a conservation technician for the western laboratory, Kurt Hauschildt. He entered on duty at San Francisco that December but left the next summer, whereupon John Jenkins hired Richard L. Andersen as his replacement.

Andersen was educated at the University of Nebraska and had sharpened his manual skills in the repair of testing instruments. After a month of introductory conservation training under Wandrus, he began treating exhibit specimens and processing backlogs of specimens in several parks with aptitude and zeal. In 1962 he continued preservation of veteran river boats at Grand Canyon National Park and Lake Mead National Recreation Area. In 1963 and again in 1965 he spent weeks on the collection at Fort Laramie National Historic Site. Sitka National Monument sent excavated objects from its study collection to him in 1964. Development target dates at Fort Davis National Historic Site in 1966 required him to set up a virtual assembly line of specimen cleaning and treatment. Bent's Old Fort National Historic Site summoned him to treat several hundred specimens in 1967. Andersen transferred to the Army Materiel Command in March 1968 as closure of the Western Museum Laboratory became imminent.[32]

When the western laboratory closed, the Branch of Museum Operations again provided the only staff source for professional object conservation. Edward P. Brown had become Wandrus's assistant early in 1961 and succeeded him as general objects conservator at the end of 1965. A reserve Army ordnance officer when the Park Service hired him, he was proficient in technical matters. He had also served a full seven-year apprenticeship followed by years of experience in the manufacturing jewelers' trade and thus had a thorough grasp of metalworking. From his years of association with Wandrus he learned the professional tenets of conservation. Park museum collections benefited substantially from his productive labor until he retired in 1976.[33]

Museum Operations selected James B. Smith, Jr., as Brown's assistant in August 1966. Pat Smith had worked as a technician and curator in the museum of the Armed Forces Pathological Institute and as curator for the George Washington University Medical School's anatomy department. Versed in techniques of tissue preservation and accustomed to a research environment, he had also attended the Service's four-week Museum Methods Course. Smith showed a commendably strong interest in reviewing the technical conservation literature on the materials being treated and in seeking expert advice. Unavoidably this tended to increase the time it took to complete work, as did his desire to learn more about the objects under treatment. Smith's development as a conservator under Brown's guidance

continued nearly four years until the move from Springfield to Harpers Ferry separated their work stations for a time.[34]

During the same period the Park Service conservation program found increasing need for conservators specialized in other kinds of objects. Growth in the number of furnished historic structure museums created insistent demands for an expert furniture conservator. Although the conservation profession had not yet established formal training for specialists in furniture, Harold Peterson found and recruited a craftsman who possessed exceptional practical knowledge and ability in the field. For thirty years Ralph Sheetz had operated a shop in the Shenandoah Valley making accurate reproductions and repairs of 18th- and 19th-century American furniture. He thoroughly understood the materials and methods involved in the construction and finish of a wide range of pieces. From the spring of 1966 until he retired in October 1978 he devoted his talents to the care of historic furniture in park collections, performing conservation of high quality in spite of continual pressure to meet target dates for museum openings.[35]

Other areas of special need in the late 1960s necessitated the use of contract conservation. A succession of unusually important textile specimens requiring treatment included the Treasury Guards flag that had snagged Booth's spur as he leapt from Lincoln's box at Ford's Theatre, the suit of clothes Lincoln had worn that night, a much older and more fragile suit associated with George Washington, and an embroidered silk bedspread the empress of China had given Theodore Roosevelt. In each of these cases the Branch of Museum Operations enlisted the help of James W. Rice, conservation scientist for the Textile Museum in Washington.

Rice visited the branch laboratory at Springfield to analyze the object, then planned an appropriate cleaning procedure. In two of the cases this involved washing and in at least one of the others dry cleaning. Both processes required him to formulate a particular cleaning solution with chemical properties designed to remove the identified soiling safely. Both also required setting up improvised cleaning tanks in the laboratory. Rice supervised the staff object conservators and staff curator Vera Craig closely as they performed the cleaning. The cleaned textile next needed proper support. The flag, for instance, was laid on a stretched backing of carefully selected wool flannel and covered with an almost invisible protective layer of fine silk. To join the three layers without affecting the integrity of the specimen, Rice brought in highly skilled needlewomen from the Textile Museum. Working on opposite sides, Helene Kovacs and Louise Cooley passed the needle back and forth to create minute, precisely placed stitches holding weak or broken threads securely.[36]

The Branch of Museum Operations also needed the help of outside experts in conserving paper artifacts. As it had since the 1940s, the

National Archives conservation laboratory continued to treat manuscripts, maps, and other single-sheet documents from park collections requiring fumigation, deacidification, and lamination. Deteriorating books with damaged bindings and brittle pages called for other types of conservation. Vera Craig found a skilled bookbinder on the growing conservation staff of the Library of Congress and another expert at the Catholic University library who undertook contracts for their preservation and restoration.

The late 1960s brought another form of outside assistance to the Park Service conservation program. The sustained influence of John Gettens at the Freer Gallery evidently persuaded the leaders of the Smithsonian Institution to increase emphasis on specimen conservation throughout its museums by establishing a central laboratory, modeled on the well-established one at the British Museum. The chief of the Conservation Analytical Laboratory would have no line authority to impose conservation standards and practices on the departmental curators, who by long tradition held responsibility for the care of collections, but he would offer them valuable supplementary services demonstrating the scientific approach and standards upheld by the profession. By 1968 Robert M. Organ, a distinguished conservation scientist formerly with the British Museum Laboratory, had assembled staff and equipment to make the new laboratory a reality. He initiated two developments ancillary to its mission that proved signally beneficial to the quality of conservation in the Park Service.

One was a course of study in the fundamentals of chemistry for conservators, a series of weekly lectures targeted principally for the Smithsonian technicians engaged in collection care. At Organ's invitation, the Branch of Museum Operations conservators and some of the curators including branch chief Ralph Lewis attended as many of the lectures as they could. The course helped significantly to bridge gaps in their training. "You have deepened their understanding of the scientific basis for the care and treatment of specimens and have instilled a philosophy of conservation as important as the practical methods you taught them," the Harpers Ferry Center director wrote Organ at the end of the eighty-hour cycle in 1972.[37]

The other was the Washington Conservation Guild, which welcomed conservators, conservation scientists, and curators as members. Its monthly meetings generally centered on the presentation and discussion of technical papers concerning aspects of conservation. Meeting places changed so that members could become better acquainted with the facilities and collections of numerous cultural institutions and no one institution would dominate. Participation enhanced members' sense of involvement in the standards, philosophy, and ethics of the profession, helped keep them up-to-date in technical matters, and furthered their contacts with knowledgeable colleagues. Museum Operations conservators and curators were active in the guild from the start. Harold Peterson served as its first president, Ralph

Lewis was on its council, and several more Park Service members held office during the 1970s and into the 1980s.

The contact the guild provided with a wide spectrum of expert conservation and the scientific background gained in Robert Organ's course helped raise the professionalism of the Service's object conservators to that of the academically trained conservators emerging from the new training programs at New York University, Cooperstown, and Winterthur. The first of these graduate conservators to join the Park Service was Janet Stone. She had worked in several museums and served in the Peace Corps as curator for the Sierra Leone Museum before training at the Conservation Center of New York University's Institute of Fine Arts and interning at the Smithsonian's Conservation Analytical Laboratory. The Branch of Museum Operations hired her as a paper conservator in 1970, as it was moving from Springfield to Harpers Ferry.

Officially the Division of Museums moved to the Harpers Ferry Center that March. Because the new HFC building contained no conservation laboratories and HFC's administration had secured no space for them elsewhere, most of the conservators had to remain behind at Springfield for an uncertain period (Chapter Five). An interim solution had taken shape for the furniture conservator. When David Wallace became assistant chief of the Branch of Museum Operations in 1968, he joined the Museum Support Group organized at Harpers Ferry pending HFC's activation and shared an office in the Brackett House, a partially rehabilitated historic building in Harpers Ferry National Historical Park. This building contained large unoccupied rooms readily adapted for the furniture conservation laboratory. Moving his work benches and power tools from Springfield, Ralph Sheetz put the new shop into production in November 1969.

After the Division of Museums settled into the new HFC building in the spring of 1970, it faced up to the space requirements for conservation. Adapting two large rooms in the park's Morrell House for paintings and paper conservation laboratories received first attention. By early 1971 Walter Nitkiewicz and Janet Stone occupied these facilities, which were intended to be temporary until Museum Operations could unite the conservation staff in the Paymaster's House. The park had recently completed exterior restoration of this larger structure and had restored and refurnished two rooms to illustrate their historic occupancy by Storer College. The branch concluded that the basement could initially accommodate the furniture and two object conservation laboratories and that the second floor could later house the painting and paper laboratories.

A succession of events altered the scheme. When HFC and the park urged interim use of a vacant store on Shenandoah Street to help enliven the lower town and give park visitors something interesting to see, the two conservators still at Springfield, Edward Brown and Pat Smith, moved there

and were joined by Herbert Martin. By the time the Paymaster's House basement was rehabilitated for their use early in 1972, the Branch of Museum Operations needed it for a registrar newly appointed to establish safe management of the museum objects converging on the center. Soon, however, the branch obtained use of the old Shipley School building, which accommodated more spacious and better equipped laboratories for all the conservators as well as meeting the registrar's requirements (Chapter Five).

In 1972 the Park Service had a professional staff of five conservators, all in the Branch of Museum Operations. Walter Nitkiewicz had come to the Service after a thorough apprenticeship under a highly qualified practicing conservator, and Janet Stone had followed the academic path of graduate training and internship. Both these channels, which would continue to be the principal avenues into the profession, rested on a fine arts background. In the absence of formal programs for training conservators in other specialties, Edward Brown and Ralph Sheetz had mastered their craft skills in the long tradition of apprentices and journeymen. Pat Smith had entered the professional ranks from a background in curatorial work. All five continued to take advantage of training opportunities such as Robert Organ's class in conservation chemistry. All actively participated in the growing network of the conservation community and each had earned wide respect within that community. Few museums in 1972 could claim a larger or more expert conservation staff.

Although the combined knowledge and skills of the five conservators embraced a wide range of cultural objects, the collections of national park museums contained a still broader spectrum. The existing team needed supplementing with conservators skilled in additional specialties, under contract if not on staff. The sheer number of specimens in need of conservation also exceeded the productive capacity of the five-person staff. The conservation program would need to expand.

Ideally, professional object conservators would work in close consultation with scholarly curators responsible for the long-term study and care of the objects. Pooling the knowledge and concerns represented by both points of view would ensure more accurate diagnoses of objects' conditions and wiser prescriptions of treatment. Few park museum collections could support scholarly curators, however, and bringing them often to the central laboratory for consultation was infeasible. The Branch of Museum Operations had two scholarly curators, Harold Peterson and David Wallace, available to consult with the conservators, and others could occasionally be called upon. Although they helped bridge the gap, they could seldom bring to bear the intimate knowledge about individual specimens their curators should possess.

Another program weakness lay in scientific support. Professional conservators necessarily guide many of their most crucial actions by the

chemistry and physics of the materials involved. They must make routine analyses and tests and require the facilities to do so. Beyond that they depend on conservation scientists to carry out more sophisticated analyses and the experiments necessary to verify and improve conservation methodology. The lack of a staff scientist undoubtedly lowered to a degree the standard of service the branch could provide, although its conservators were able to refer questions occasionally to the Conservation Analytical Laboratory and other government laboratories.[38]

The conservators in 1972 likely felt more concern about the Shipley School building they would obtain, outfit, and occupy that year. A large, main floor classroom became the paintings laboratory for Walter Nitkiewicz. It accommodated his examining table, large new vacuum relining table and smaller old one, easel, bench for work on frames and stretchers, soapstone sink, and most other necessities. Although the spray booth for applying picture varnish had to be installed on the second floor, Nitkiewicz had easier access to the paintings storeroom just across the hall. Another main floor classroom was transformed into the paper conservation laboratory for Janet Stone. It contained a new chemical bench with fume hood, additional sinks, work tables, drying racks, and cabinets for paper storage. One of its principal features consisted of a large, shallow tank custom-built with special temperature controls and piped deionized water.

Edward Brown's facility for conserving historical artifacts, upstairs over the paintings laboratory, contained his work benches, lathe, drill press and other metalworking equipment, sink, and cabinets. At the other end of the second floor two classrooms provided for Ralph Sheetz's furniture laboratory. One held work benches, cabinets, and open space for the pieces being treated; the other housed the woodworking machinery and wood storage. The fifth laboratory fitted to best advantage in the basement, where Pat Smith would work mostly on objects recovered through historical archeology. For smaller items he had a former classroom containing a long work bench, a chemical bench with reagent cabinets, additional cabinets, and closet storage. Adjacent open space in the wide hall and an alcove provided for airbrasive, ultrasonic, and electrochemical cleaning equipment and for working on big objects.

The new laboratories afforded a much-improved work environment and permitted a start on staff expansion. Allen Cochran, a private furniture restorer for more than twenty years with whom the branch had recently contracted, came to work with Ralph Sheetz in the furniture laboratory in 1972. Fonda Thomsen, the other new conservator hired that year, extended the variety of objects for which the branch could provide expert treatment. She had an academic background and some research experience in chemistry and biology, had done graduate work in the fine arts, and had trained at the Smithsonian's Conservation Analytical Laboratory. In line

with her interests, the branch assigned her to conserve ethnographic and historic artifacts largely of organic materials, such as textiles and leather, and equipped another main floor classroom across from the paper laboratory for the purpose.[39]

In 1974, following establishment of the Division of Museum Services with Arthur Allen as chief, two more positions were added to the conservation staff. F. Daniel Riss, a military veteran with a degree in anthropology/archeology and practical experience in photography, began as conservation assistant to Pat Smith in the excavated materials laboratory. Riss shared Smith's habit of thoroughly reviewing the pertinent technical literature as he proceeded and became increasingly responsible for the staff's reference resources. Upon Smith's death in January 1977, Riss succeeded him as conservator of archeological materials. In his second 1974 appointment Allen recruited Barclay Rogers, a naval reserve officer with experience as a metalsmith, corrosion control officer, ordnance officer, and aviator, to work under Edward Brown in the metal artifacts laboratory. When Brown retired in 1976 after fifteen years of able conservation service, Rogers succeeded him as metal artifacts conservator.

Charles Shepherd, who had graduated from the West Virginia School for the Deaf and acquired molding and casting skills in a dental laboratory, became Rogers' assistant in December 1976. Later he acquired special competence in the cleaning and repair of natural history specimens, enabling the division to expand its service.[40] Conservation technicians and conservators in training would prove useful in other division laboratories as well. Thurid Clark and Anna Johnson became apprentices in the ethnography conservation laboratory in 1976 and 1977, continued their association with the later textile laboratory, and went on to careers in conservation. The division hired Dale Boyce as an apprentice to the furniture conservators in 1978; he remained as a valued helper for about three years. Janet Werner served as an intern and apprentice in paper conservation under Janet Stone beginning in 1975 and later provided technical assistance to Walter Nitkiewicz in the paintings laboratory before continuing her conservation training at the Smithsonian Institution.

Internships for a time provided a form of mutual assistance benefiting the conservation laboratories. At least two interns were final-year graduate students in the select academic programs of conservation training. More represented the broader museum studies programs recently instituted in various colleges and universities. Letitia Allen was from Hood College, like Janet Werner, and interned particularly under Walter Nitkiewicz. Richard Trela of the first class in the graduate conservation program at Cooperstown also interned in the paintings laboratory. Carol Snow from Shepherd College interned in the ethnographical laboratory and went on to become a respected professional conservator. Richard Rattenbury, one of

several interns from Texas Tech University, gained practice in the metals and excavated objects laboratories. Brook Bowman, Nancy Hillery, and Barbara O'Connell from Texas Tech spent time in the paper laboratory among others. The paper laboratory also provided practical experience to Jeffery Goldstein, an Antioch College chemistry major who worked on deacidification methods and solvent research.

Interns, like apprentices, supplied practical assistance, but the instruction and close supervision they required reduced the time staff conservators could devote to their primary work. The instructional workload tended to become excessive during the 1975–79 period when it included the Phase II curatorial methods students from the parks (Chapter Five).

In 1976 the Park Service consulted with the Fish and Wildlife Service regarding conservation of the historic materials they had jointly helped salvage from the wreck of the SS *Bertrand* in DeSoto National Wildlife Refuge, Nebraska. The preservation of some 40,000 artifacts that had lain submerged in the Missouri River steamboat for more than a century was at stake. The two bureaus agreed that the Division of Museum Services should set up a temporary conservation laboratory on site to put the objects into a proper state of preservation and safe storage and to get them under catalog control. Fonda Thomsen was asked to manage the *Bertrand* laboratory project. She hired Edward McManus as an experienced archeological conservator in April 1977, and the two began work at the site the next month. They completed their difficult assignment in the fall of 1979.

To meet the need for conserving ethnographical specimens at Harpers Ferry during this interval, the division selected Toby J. Raphael in September 1977. After graduation from the University of California at San Diego with a double major in art and anthropology, he had enrolled in George Washington University's museum studies graduate program specializing in the conservation of ethnographic objects. An internship under Carolyn Rose in the anthropology conservation laboratories at the National Museum of Natural History was followed by a third year of advanced training at the Paul Coremans Center for Conservation in Mexico City. Raphael continued as the division's ethnographical conservator through the 1980s and beyond.

Just before Raphael's appointment, the division broadened the scope of its conservation services by staffing and equipping another specialized laboratory. Gregory S. Byrne entered on duty as conservator of ceramics and glass in August 1977. He had attended courses at the Cooperstown graduate program in conservation while apprenticed to Sidney S. Williston, a master objects conservator in private practice. After his apprenticeship he continued as a staff conservator for Mario's Conservation Services in

Washington until moving to the Smithsonian's Conservation Analytical Laboratory. The division fitted out a laboratory for him in the Shipley School basement but soon shifted his operation to the main floor.

Other staff changes ensued. To prepare for the retirement of Ralph Sheetz the division recruited his nephew, Ronald E. Sheetz, in February 1978. Ron possessed comparable technical knowledge and skills gained from a similar background, having successfully operated his own furniture restoration and reproduction business for nearly twenty years. With his uncle's retirement that October he succeeded Allen Cochran, who moved up to senior furniture conservator. In 1979 Janet Stone accepted appointment to the faculty of a new conservation training program at the Canberra College of Advanced Education in Australia. She was replaced as paper conservator by Susan Nash Munro, who had trained at Cooperstown and worked at the Canadian Conservation Institute and the Pacific Regional Conservation Center in Hawaii. Munro resigned in 1983 to care for her newborn child but later performed paper conservation for the Park Service under contract.

The death of Walter Nitkiewicz in January 1979 left the Service without a paintings conservator. To carry on his essential work the division selected Thomas G. Carter, chief conservator of the National Collection of Fine Arts (now National Museum of American Art). Carter had begun an apprenticeship there in the conservation of paintings before his graduation from George Washington University and had remained ten years afterward. When hired by the Service in October 1979 he was already a fellow of the American Institute for Conservation of Historic and Artistic Works and soon received fellowship in the International Institute as well. The paintings in park collections remained in good hands.

By this time the conservation organization, then including eight professional conservators and two conservation technicians in seven specialized laboratories, had expanded to the point where it merited status as a formal branch within the Division of Museum Services. Pending official approval by Harpers Ferry Center management, Arthur Allen proclaimed a de facto Branch of Conservation Laboratories. The *Bertrand* project had progressed far enough by the end of 1978 for him to recall Fonda Thomsen to assume the role of branch chief.[41] She coordinated the operation with a support staff of six. Among them were James (Mike) Wiltshire, by then a skilled and well-equipped photographer who provided the conservators with the critical before-, during-, and after-treatment visual records essential for their reports, and museum technician Tyra Walker, responsible for locating qualified conservators in private practice or other needed specialists and arranging and administering contracts.

About a year and a half of organizing and overseeing the Branch of Conservation Laboratories on the heels of her managerial stint with the

Bertrand project led Fonda Thomsen to request reassignment to the hands-on conservation she preferred. In 1980 she was appointed textile conservator with a newly equipped laboratory in the Shipley School basement. Thomas G. Vaughan transferred from the superintendency of Grant-Kohrs Ranch National Historic Site that July to head the branch, by then formally established. Having strongly advocated higher standards of collection management in parks where he had served, he proved ready to support the specimen conservation program with vigorous leadership.

Now with nine conservators, two conservation technicians, and seven support positions, the branch had grown to its ultimate size. In the process it had kept pace with the maturing profession. The staff conservators reflected the advances in professional training that had developed. The equipment of their laboratories had increased correspondingly in sophistication. Backed by a well-organized support staff and efficient procedural system, the conservators under Vaughan's direction offered park collections a service of exceptional quality.

The conservators grasped opportunities for advanced training to maintain their professional currency. In the 1977 fiscal year, for example, Janet Stone's laboratory hosted a two-week workshop course taught by Keiko Mizushima Keyes, a widely renowned paper conservator who bridged the gap between oriental and western techniques. She guided Stone, Walter Nitkiewicz, and Janet Werner through the analysis and treatment of 15 park specimens presenting unusual difficulties. The same year Allen Cochran attended a course in the identification of wood species at San Diego, and three years later he participated in a conference on historic upholstery and drapery at the Boston Museum of Fine Arts and Old Sturbridge Village. In 1980 Toby Raphael spent four weeks at the International Centre for the Study of the Preservation and the Restoration of Cultural Property (ICCROM) in Rome taking its Scientific Principles of Conservation course. To refresh and refine her skills in textile conservation Fonda Thomsen studied at the Abegg-Stiftung Bern, a Swiss museum outstanding for its scientific care of textiles.

The conservation program still lacked a conservation scientist to carry out refined preliminary analyses and similar research that characterized the top echelon of conservation laboratories, and the Park Service still could not provide the level of curatorial scholarship needed to guide conservation treatment of many individual objects. The reorganization of mid-1982 that separated the conservation staff from the chief curator's oversight while leaving her responsible for the conservation of the collections in park museums (Chapter Five) did nothing to correct either fault.

Two developments aimed to alleviate if not yet solve at least the curatorial problem. First, the new curatorial services staff under Chief Curator Ann Hitchcock in the Washington Office collaborated informally

with the Harpers Ferry Center conservators, particularly on matters of preventive conservation. Aspects of collection environment and care were of concern to both parties, and the conservators cooperated in providing expert advice. Second, professional conservation for park collections began to decentralize. The Western Archeological Center had set up a conservation laboratory in 1977 staffed with an able conservation technician, a step viewed with some anxiety at first by the Division of Curatorial Services in Harpers Ferry. When Edward McManus completed his assignment with the *Bertrand* project, the North Atlantic Region hired him as objects conservator. He engaged in both specimen treatment and curatorial training. When Janet Stone returned from Australia in 1983, the same region employed her as a full-time conservator focused especially on its massive problem of conserving plans at Frederick Law Olmsted National Historic Site but helping other parks as well.

The Branch of Museums and its successors had discouraged field areas from hiring or contracting with conservators, but conditions had changed. In earlier years qualified conservators were rare, training opportunities for them were scarce, and many restorers soliciting park museum business were unreliable. By 1982 the conservation profession still lacked a recognized referral system, but effective graduate training programs had acquired stature. So had several cooperative conservation centers that brought trained conservators and well-equipped facilities closer to the parks.[42] The Pacific Northwest Region began contracting with the Rocky Mountain Regional Conservation Consortium to treat park museum specimens in 1982 and later set up a cooperative agreement with this nonprofit organization.

Growth in the conservation profession also relieved the concern long felt by Park Service curators about the treatment given archeological collections. Archeological sites and the objects associated with them became a focus of training and research in the conservation community. When the Service's Western Archeological Center occupied its new quarters in Tucson in 1980, the facility included a conservation laboratory that would treat specimens deposited at the center and sent in from parks.

Scientific conservation in the national parks may be said to have come full circle in 1982. Thirty-three years after John Gettens had introduced the scientific approach to Park Service conservation problems in his study of the Tumacacori Mission murals, the ruin again needed the attention of experts. This time the Service called on ICCROM. Three internationally respected mural conservators, Paul Schwartzbaum, Carlo Giantomassi, and Donatella Zari, visited the park, analyzed the problems, then supervised Service conservators and historical architects in weeks of painstaking treatment. Notably, this was the first actual treatment project ICCROM personnel had undertaken in the United States.[43]

NOTES

1. Public Law 64-235, U.S. *Statutes at Large* 34: 335.

2. In cleaning and relining paintings, for example, fine arts restorers had no way of understanding the long-term effects of their adhesives, solvents, and procedures. In an occupation without established standards, a clever craftsman might dismember a fine antique chair, incorporate each part into an otherwise reproduced copy of the chair, and sell each reproduction as an antique.

3. American Institute for Conservation of Historic and Artistic Works, *1989-90 Directory*, p. 21.

4. New York University's Institute of the Fine Arts established its Conservation Center with a four-year graduate training program in 1960. The New York State Historical Association in collaboration with the State University College at Oneonta opened a similar program at Cooperstown in 1970. The Henry Francis du Pont Winterthur Museum and the University of Delaware began their joint program in 1974. The Intermuseum Conservation Association launched an apprenticeship program with Oberlin College in 1968, and the Fogg Museum, which had largely dismantled its conservation research and training program in the late 1940s, resumed formal apprenticeships in 1970. *The History and Future Directions of Conservation Training in North America* (Washington: National Institute for the Conservation of Cultural Property, 1984), pp. 5-7, 8, 11, 18, 26.

5. "The Conservator-Restorer: A Definition of the Profession," *ICOM News* 39, no. 1 (1986): 5-6.

6. U.S. Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year Ending June 30, 1919* (Washington: Government Printing Office, 1919), p. 125; *Report of the Director for 1926*, p. 49; "Master Plan Brief for Sitka National Monument," 1965, Sitka NM box, NPS History Collection.

7. Museum Preparation Memorandum No. 1, Feb. 15, 1935, Exhibit/Museum History before 1938 box, NPS History Collection; Plenderleith, *The Preservation of Antiquities* (London: The Museums Assn., 1934); Leechman, "Technical Methods in the Preservation of Anthropological Museum Specimens," *Annual Report for 1929*, National Museum of Canada Bulletin No. 67 (Ottawa: National Museum of Canada, 1931).

8. Lee G. Crutchfield, "The Chemical Preparation and Preservation of Museum Antiquities," *Museum News* 14, no. 14 (Jan. 15, 1937): 7-8.

9. Burns, "Report of the Museum Division on the Present Status and Future Development Program of National Park Service Museums," Dec. 4, 1936, p. 10, Annual Reports, Branch of Interpretation box, NPS History Collection; Museum Division monthly reports, June 1937 and September 1938, Monthly Reports, Museum Division 1936-39 box, ibid.

10. Burns, "Preservation of the Mammoth Cave Mummy," *Museum News* 17, no. 8 (Nov. 1, 1939): 8.

11. Museum Division monthly report, April 1941, Monthly Reports Museum Division box, NPS History Collection.

12. Museum Division monthly reports, February and August 1940, ibid.

13. Museum Division monthly report, April 1941, ibid.

14. *Field Manual for Museums* (Washington: National Park Service, 1941), pp. 118-19. The chapter reveals no familiarity with the fine arts conservation work underway at the Fogg Museum.

15. Museum Division monthly reports, July 1947, May and July 1948, Monthly Reports Museum Division box, NPS History Collection.

16. Steen and Gettens, "Tumacacori Interior Decorations," Western Archeological Center Archives.

17. Letter, Small to Lee, May 4, 1949, Salem Maritime NHS box, NPS History Collection.

18. Region One circulars, July 13 and Sept. 7, 1949, and report, August 1949, Exhibit/Museum History 1943-59 box, ibid.

19. Betty Jones continued to head the conservation department at the Fogg Museum as it expanded during 22 ensuing years.

20. Diana Pardue, comp., "Preserving the Past: An Introduction to the Division of Museum Services, National Park Service, Harpers Ferry Center," 1980, pp. 97-99, Museum History 1975-79 box, NPS History Collection.

21. "Technical Report: The Use of Acid-Type Rust Removers Containing Iodine in Museum Field Work," Sept. 30, 1951, and transmittal letter, Wandrus to Burns, Oct. 2, 1951, Museum/Exhibit History 1941-59 box, ibid.

22. The state of Ohio, for example, turned to Wandrus in restoring the flags its regiments had carried in the Civil War. In 1959 he devised a safe and effective mounting for the heavily embroidered Anspach-Bayreuth regimental standard, a Hessian trophy of the Revolutionary War, for exhibit at Colonial National Historical Park.

23. Museum Branch monthly report, February 1954, Monthly Reports Museum Division box, NPS History Collection; "Paul H. Downing, Editor Emeritus," *The Carriage Journal* 10, no. 2 (Autumn 1972): 54-60.

24. Memorandum, Acting Chief, Branch of Museums, to Regional Director, Region Five, Nov. 25, 1959, Branch of Museums Dailies 1959-62 storage box, NPS History Collection. Wandrus's experience with polyethylene glycol led the Smithsonian to request his help in treating a Revolutionary War gunboat salvaged from Lake Champlain.

25. Museum Branch monthly reports, March and June 1954, January 1955, February and September 1956, April 1957, March 1958, April 1960, August 1961, Monthly Reports Museum Division box, ibid.

26. Museum Branch monthly reports, April 1955, March and July 1956, ibid.

27. Museum Branch monthly report, September 1959, ibid.; U.S. Department of the Interior, *1961 Annual Report, The Secretary of the Interior* (Washington: Government Printing Office, 1961), p. 370.

28. Nitkiewicz, "Treatment of the Gettysburg Cyclorama," *Studies in Conservation* 10, no. 3 (August 1965): 91-118.

29. In 1963 Nitkiewicz removed two large murals from the deteriorating main building on Ellis Island pending restoration of the structure. A ceiling mural in Glenmont at Edison National Historic Site required complicated conservation in 1966. In 1971 Nitkiewicz cleaned and restored seven large Ezra Winter murals in the memorial building at George Rogers Clark National Historical Park and removed many layers of paint from William Rush's large carved wood statue of George Washington at Independence Hall.

30. Ralph H. Lewis, *Manual for Museums* (Washington: National Park Service, 1976), pp. 40, 63.

31. One shipment of specimens reached Wandrus with an empty package. The missing item, a significant fur trade relic intended for display at Grand Teton National Park, was found in the freight car that had transported it.

32. Memorandum, Chief, Western Museum Laboratory, to Chief, Museum Branch, Sept. 1, 1961, and various Western Museum Laboratory monthly reports 1962-68, Monthly Reports Museum Division box, NPS History Collection. For several of Andersen's special assignments the laboratory detailed John Segeren, its exhibits sculptor, as his technical assistant.

33. Mature judgment, steady application, and cheerful cooperation characterized Brown's work. Characteristically he asked only one question about working conditions when he applied: Might he use his leave during the Pennsylvania deer-hunting season? He was not an ardent hunter, but his hunting friends depended on him as camp cook.

34. Smith became very interested in the fuses of unexploded Civil War artillery shells received for cleaning and preservation, developing x-ray methods of studying them and presenting a paper on the subject at an archeological conference. Brown with his ordnance background doubtless felt relieved to distance himself from Smith's probing of old fuses in unexploded shells.

35. Director's staff meeting minutes, Apr. 14, 1966, Staff Meetings (Director) 1964-69 box, NPS History Collection; letter, Russell Hendrickson to Ralph and Dorothy Sheetz, Oct. 19, 1978, NPS Archives Acc. No. 31 storage box, ibid.

36. James B. Smith, Jr., "Conservation of the Regimental Unit Color The U.S. Treasury Guards," *Studies in Conservation* 14, no. 3 (August 1969): 119-25; James W. Rice, "The Lincoln Assassination Garments: A Case Study in Cleaning," *Museum News* 48, no. 6 (February 1969): 44-48.

37. Letter of Mar. 28, 1972, Branch of Museums/Museum Operations Dailies August 1962–December 1966 storage box, NPS History Collection.

38. This was perhaps an unsolvable problem at the time. Conservation scientists were scarce and equipping their laboratories was expensive. The 1989 salary survey of the American Institute for Conservation of Historic and Artistic Works included only eight such professionals among 411 respondents (*AIC Newsletter* 15, no. 2 [March 1990]: 10).

39. Other staff conservators had previously coped as necessary with the kinds of objects Fonda Thomsen would treat. The transfer of responsibilities engendered individual reactions ranging from relief to disappointment. Increased specialization nevertheless seemed the proper direction for improving the branch's work quality.

40. "1977 Annual Report, Museum Services, National Park Service, Harpers Ferry Center," pp. 43, 53-58, 123, 126-27, Curatorial Services Division files, Harpers Ferry. Allen arranged supplemental training for Shepherd at the National Museum of Natural History where he learned methods of rehabilitating older natural specimens.

41. She continued to monitor the *Bertrand* work until Park Service participation was completed in October 1979.

42. In 1952 Richard Buck from the Fogg Art Museum established the Intermuseum Conservation Association, which pooled resources of several midwestern museums to operate a conservation laboratory at Oberlin College. Similarly conceived regional laboratories followed in other parts of the country.

43. Douglas L. Caldwell, "Rome Center Experts Direct Tumacacori Project," *CRM Bulletin* 5, nos. 1-3 (September 1982): 1-4.

SOURCES CONSULTED

The Harpers Ferry Center Library of the National Park Service at Harpers Ferry, West Virginia, contains most of the sources consulted for this history. The library's largely documentary National Park Service History Collection preserves records in both its General Collection and Park Historic Reference Files. In the former, material was found in some fifty boxes bearing such labels as History of Interpretation, Museum/Exhibit History, Branch of Interpretation Annual Reports 1934–42, Branch of Research and Interpretation Monthly Reports July 1938–December 1940, Museum Division Monthly Reports, Museum Labs General Correspondence 1959-62, Western Museum Lab General Correspondence 1958–66, Western Museum Lab Personnel, Western Museum Lab Reports, Western Museum Lab Files, and Western Museum Lab Product Catalog. Boxes marked General Files and Notes on Exhibit Progress and an unmarked storage box contain other Western Museum Lab files. Other storage boxes are labeled Branch of Museums Dailies, Museums Development Dailies, Branch of Museums General Files, Eastern Museum Lab File, Museum Methods Training, Interpretive Planning, Behavior Studies, Biographies A-B, Conferences and Meetings, Director's Staff Meeting Minutes, Policy and Philosophy 1960–67, Reorganizations, Field Orders 1950–69, World War II NPS, and American Association of Museums.

Unboxed material consulted in the General Collection includes transcripts of oral history interviews with Verne E. Chatelain, George L. Collins, Elbert Cox, Jean C. and Virginia S. Harrington, Walter B. McDougall, and Arthur J. Stupka; published annual reports of the Department of the Interior and the National Park Service for various years from 1904 to 1961; a binder titled Museum Policy; miscellaneous superseded volumes of the NPS *Administrative Manual*, especially volume 25, "Information and Interpretation in the Field"; early releases of the NPS *Museum Handbook*; and cited issues of *Park Service Bulletin*, *National Park Service Newsletter*, *Courier*, *National Park Service Interpreters' Newsletter*, *The Regional Review*, *Yosemite Nature Notes*, and *Mesa Verde Notes*. The cited historic furnishing plans and interpretive prospectuses were found among the many research and planning reports filed alphabetically by park in the General Collection.

The Park Historic Reference Files contain additional archival material related to specific parks. Material was used from boxes on Everglades, Grand Canyon, Grand Teton, Great Smoky Mountains, Hawaii Volcanoes, and Hot Springs national parks; Casa Grande Ruins, Fort McHenry, George Washington Birthplace, Little Bighorn Battlefield, and Scotts Bluff national

monuments; Colonial, Morristown, and Sitka national historical parks; Salem Maritime and Vanderbilt Mansion national historic sites; Shiloh and Vicksburg national military parks; Federal Hall National Memorial; Jefferson National Expansion Memorial; and Blue Ridge Parkway.

Other sources consulted at Harpers Ferry include current office files on Service-wide museum matters, the National Catalog, and the NPS Clearinghouse in the Harpers Ferry unit of the Curatorial Services Division; files of Harpers Ferry Center's Division of Conservation; and the Vera Craig File in HFC's Division of Historic Furnishings.

Elsewhere, research was conducted in the Carl Parcher Russell Papers at the Washington State University Archives at Pullman, Washington; the personal files of Richard W. Russell, containing diaries, letters, and reports of his father, Carl P. Russell; the records of the National Park Service (Record Group 79) in the National Archives in Washington, D.C., for Casa Grande annual reports, 1902–27; the files of the Curatorial Services Division in the Washington Office; and park files at Casa Grande Ruins National Monument, Grand Canyon National Park, Sequoia National Park and its Lodgepole Visitor Center Library, and the Yosemite National Park Research Library. Curatorial staff supplied copies of documents from files at Everglades, Great Smoky Mountains, and Mesa Verde national parks; Colonial and Independence national historical parks; Pipestone National Monument; and the Yosemite National Park Research Library.

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INDEX

AAM (American Association of Museums) 41, 108, 250
  Committee on Museums in National Parks 31
  Hamlin, Chauncey J. 30, 49
  Museum News 300
  Yosemite Museum, involvement in development of 312
Abbott, Stanley 144
Abel, Leland J. 150, 308, 323
Acadia National Park 58, 82, 283
Accessions
  committee on acquisitions, 1939 298
  documentation of authenticity 296
  early format for 37
  policies and procedures for 106, 291
  of similar items by different parks 123
  source of accessions file 310
  Sundry Civil Act of 1920 296
  temporary custody of objects 310
  title, problems of 19
  transfers 47
  see also Deaccessions
  see also Documentation
  see also Gifts
Accountability 24, 203
  for collections stored off-site 261
  computerization of museum catalog 210
  inspector general's report on accountability of collections, 1981 204
  museum management review 208
  see also Documentation
Acheson, William 187
Acquisition, planning for 293
  see also Accessions
Adams National Historic Site
  Adams Memorial Society 276, 282
  furnishings 282
  Old House 276
  paintings 279, 344
Administrative Manual 293, 315
Advisory Board on National Parks, Historic Sites, Buildings, and Monuments 91, 107
Agate Fossil Beds National Monument 271
Ainsworth, Robert L. 194
Alaska Region 323
Albright, Horace M. 10
Albro, Elizabeth 307, 319, 323
Allen, Arthur C.
  advocates museum program representation in Washington Office 211
  biography 195
  Curatorial Methods Course, 196
  development of curatorial standards 202
  environmental monitoring equipment for parks 319
  Great Smoky Mountains NP, inspection of collection 261
  Museum Operations, Branch of, assistant chief 195
  Museum Services, Division of, chief 197
  National Catalog, development of 209, 310
  scope of collection statement, development of 294
Allen, Florence E. (Libby) 211
Allen, Letitia 211, 357
Allen, Mrs. Arthur C. 208
American Assocation of Museums
  see AAM
American Museum of Immigration 156, 194
American Museum of Natural History 38, 142, 173
American Pioneer Trails Association 279
Ames, Oliver 12
Andersen, Folmer, Collection at Christiansted NHS 270
Andersen, Richard L. 187, 351
Anderson, Robert 285
Andrew Johnson National Historic Site 236, 283
Andrews, Joseph 73
Animation 100, 103
Antietam National Battlefield 73
  exhibits at 82
  storage of collections 313
Antiques 19, 225
Antiquities Act of 1906 13
Appleman, Roy E. 163
Appomattox Court House National Historical Park
  Clover Hill Tavern 138
  McLean House 242
Archeology 11
  artifact analysis 268
  Casa Grande 12
  centers for 257, 301
  Colonial NHP (Jamestown) 22
  historical 19, 22, 89
  interpretation of excavations 22
  surveys 268, 275
Architecture
  Jefferson National Expansion Memorial 92
  Independence NHP, Franklin Court 198
  of park museums 77
  structures, restoration of historic 224
Archives 268, 275
Archives, NPS 197
Arlington House 227
  conservation treatment of artifacts 339
  furnishings at 283
  prototype barriers in 250
Artifact analysis 22
  see Research, curatorial
Association for the Preservation of Virginia Antiquities 21

Audiovisual Arts, Division of 185
Authenticity
of collections, questionable 23, 24
documentation of 296
Automation 210, 258, 310
Avinoff, Andrey 45
Aztec Ruins National Monument 99

Babyak, John 151, 154
Bahlman, William S. 164
Bailey, Worth 22, 238, 326
Bandelier National Monument 105
Barber, Doris 192
Barnette, Stuart 229
Barrel, Robert L. 66, 148
Barriers in furnished structures 249
Barton, Ann 211
Basic Curatorial Accountability and Collection Management Course 205
Bauss, Rudolf W. 80, 97
Bayless, Jonathan 205
Beal, Ralph L. 57
Bear Mountain 38
Beard, Daniel B. 149, 158
Bearss, Edwin C. 284
Beatty, Matthew 106
Bender, Ross 261
Bennett, Lyle 108, 312
Benson, Harry C. 2, 10
Bent's Old Fort National Historic Site 351
Berosa, Barbara 328
Berry, William D. 154
Bertrand, DeSoto National Wildlife Refuge 358
Bibliography, of western parks, produced by Works Progress Administration 101
Bicentennial, development projects 198, 201
Biebigheiser, Lloyd W. 74
Bierly, Edward J. 148, 180, 189
Bigelow, Major John, Jr. 1, 291
Big Bend National Park 251
Big Hole National Battlefield 199
Biosphere reserves 261, 322
Birch, Thomas 279
Biskin, Marilyn 146
Blue Ridge Parkway 293
Museum of North Carolina Minerals 141
Bohnert, Allen 328
Bond Building 84
Book of Museum Procedure 95
Borresen, Thor 22
Boston National Historical Park 284
Boulder Dam National Recreation Area 107

Bowie, E. Berkley, Collection at Fort McHenry NM 82, 279
Bowman, Brook 211, 358
Boyce, Dale 211, 357
Bradford, Walter H. 194
Bradley, Betsy (Hunter) 208
Branch of Conservation Laboratories
see Conservation Laboratories, Branch of
see also Museum Services, Division of
Branch of Historic Sites and Buildings 79
Branch of Museum Development
see Museum Development, Branch of
Branch of Museum Operations
see Museum Operations, Branch of
Branch of Plans and Design 57, 76
Branch of Research and Education 20, 55, 58, 77
Brockman, C. Frank 16
Bronson, Wilfrid Swancourt 73, 81
Brooke Collection at Hopewell Furnace NHS 299
Brown, Edward P. 210, 351
Brown, James Wright 133
Brown, William L. 201
Browning, Bond J. 194
Brucksch, John P. 245
Brugge, David M. 323
Bryant, Harold C. 8, 67, 259
Branch of Research and Education, assistant director 59
Grand Canyon NP 84
Yosemite, guide in 4
Buffalo Museum of Science 44, 76, 90
Buffmire, Frank E. 94, 120, 131, 137, 138, 141, 158
Bumpus, Hermon C. 31, 49, 59, 292
biography of 32
staffing, curatorial 322, 325
Yellowstone 42
Burbank, Elbridge 279
Burns, Ned J. 60, 104, 117, 127, 295, 339
biography 75
committee on acquisitions, in 1939 298
dioramas, expertise in 79
furnished historic structures 231
Interior Department Museum 78
inventory of nationally significant treasures, World War II 107
manual for protecting objects from hazards of war 107
museum manual, writing of 95
standards for museum exhibits 87
study collections, scope and use of 293
Zenger Memorial at Federal Hall 133
Burroughs, Carroll A. 163
Bush, Kent M. 324
Butcher, Reginald W. 154, 187
Butts, Edward 272
Byrne, Gregory S. 358

Cabinets 207, 314
see also Storage equipment
Cabot, John B. 163, 164
Cadwallader, Grant A. 194, 197
Cady, E. R. 259
Cain, Stanley A. 260
Cammerer, Arno B. 59, 77, 295
Camp, W. H. 260
Cannon, reproductions 201

Canyon de Chelly National Monument 182
Cape Hatteras National Seashore 138, 284, 301
Capitol Reef National Park 187
Carasso, Lina 187
Carey, Herbert 154
Carl Sandburg Home National Historic Site 283
Carlsbad Caverns National Park 141
Carnegie Corporation 41
Carnegie Museum of Natural History 265
Carnifex Ferry State Park 142
Carr, William H. 39
Carroll, Lynn 211
Carson, Nan V.
see Rickey, Nan (Carson)
Carter, Thomas G. 359
Casa Grande National Monument 12
Cases, exhibit
see Exhibit cases
Castillo de San Marcos National Monument 107, 110, 227, 349
Castro, I. J. (Nash) 164
Cataloging 303
backlogs 309
Museum Records Handbook, implementation of procedures for 307
see also Accessions
see also Documentation
Caywood, Louis R. 274
Century of Progress Exposition (1932) 54, 79
Chatelain, Verne E. 20, 59, 67, 85
Checklist
Checklist for Museum Planning 108, 312
Exhibit Room Inspection Checklist 184
Chenhall, Robert 210
Chermayeff and Geismar design firm 175
Chickamauga and Chattanooga National Military Park 87, 118
Claud E. and Zenada O. Fuller Collection 280
Ochs Memorial 94, 137
Children of the American Revolution 21, 226
Christiansen, Carl 129
Christiansen, Gardell 129
Christiansted National Historic Site 270
Ciampaglia, Carlo 341
Civil Works Administration 269
Civilian Conservation Corps
at Colonial NHP 20
at Mesa Verde 17
furnished historic structures, stabilization of 223
Great Smoky Mountains NP 258
legislation establishing 55
Ocmulgee NM 270
structures, restoration of 229
Clapp, Anne F. 348
Clark, James L. 60
Clark, Thurid 211, 357
Classification 210
standardized system for NPS collections 308
Clearing House for Southwestern Museums 298
Clearinghouse 203, 301
Cochran, Allen 210, 356
Coleman, Laurence Vail 106
Historic House Museums 222
Manual for Small Museums 51
Colgan, Joseph 74
Colin, Marcel 83
Collecting, on-site 259
early practices 37
permits 261
surface collecting 268
Collection Management Plan 313
Hubbell Trading Post NHS, first NPS 208
Collection Preservation Guide 208
Collection Storage Plan 313
Collection, National Park Service
History Collection 201
National Catalog of 209
status of, in 1976 208
Collections 14
accountability for 24
authenticity of 24
Andersen, Folmer Collection, Christiansted NHS 270
Bowie Collection, Fort McHenry NM 69
Brooke Collection, Hopewell Furnace NHS 299
Butts Collection, Pipestone NM 272
David T. Vernon Collection, Grand Teton NP 273
E. Berkley Bowie Firearms Collection 279
ethnology 6
foundation for most exhibits 72
Fuller Collection, Chickamauga-Chattanooga NMP 139
interpretive function of 48
Lucullus V. McWhorter Collection at Nez Perce NHP 272
Mary Elizabeth Jane Colter Collection, Mesa Verde NP 271
Mitchell collection, Yosemite NP 6
most useful when preserved on site 12, 14
National Park Service, status of 189, 257
primary park resources 257
Stephen C. Wolcott Collection at Colonial NHP and Eastern Museum Laboratory 280
Collections, archeological 268
cataloging of 310
Collections, archival
accessioned contrary to NPS policy 276
Collections, art
acquired as part of historic furnishings 279
conservation treatment of 341
Folmer Andersen Collection, Christiansted NHS 270
Henry H. Spalding Collection at Nez Perce NHP 273

Hill, Thomas, paintings by, in Yosemite NP 278
Home of Franklin D. Roosevelt National Historic Site 279
Independence NHP 277
inventory of American paintings 277
Jorgensen, Christian, paintings in Yosemite NP 278
Moran, Thomas, works by 278
Nitkiewicz, Walter, conservator of 349
storage of 316
Thomas Moran Art Collection of the National Parks 278
Collections, care of 165, 202, 291, 311
see Documentation
see Preservation and protection
see Storage spaces
Collections, cultural, as conveyors of historical data 48
Collections, ethnographical 268, 271
Mary Elizabeth Jane Colter collection, Mesa Verde NP 271
Collections, geological 40, 262
Collections, historical 274
Brooke Collection at Hopewell Furnace NHS 299
classification for 210
furnishings collections 281
Kendall Collection of firearms, Great Smoky Mountains NP 280
staffing, curatorial 325
see also specific categories (e.g., Collections, maritime)
Collections, manuscript
accessioned contrary to NPS policy 276
conservation of 340
Collections, maritime 284
Sawtelle Collection, Acadia NP 283
Collections, military 279
Claud E. and Zenada O. Fuller Collection, Chickamauga and Chattanooga NMP 280
E. Berkley Bowie Firearms Collection 279
R. W. Johnson Collection, Fredericksburg and Spotsylvania County Battlefields Memorial NMP 280
Springfield Armory NHS 281
Collections, Native American 271
Mitchell collection, Yosemite NP 6
Collections, natural history 259
McDougall, Walter B., developed herbaria in many parks 263
classification of 210
Schonewald-Cox, Christine 205
storage for 314
Collections, paleontological 264
Collections, study 48, 52, 139, 258, 311, 321
Collections, use of 321
Colonial National Historical Park 20, 56, 68, 89, 136, 141, 144, 162
Abbott, Stanley 144
Caywood, Louis R. 274
Children of the American Revolution 226
Civilian Conservation Corps in 20
collections in 285
conservation treatment of collections 338, 343, 347
Cotter, John L. 144, 274
Daughters of the American Revolution 225
Daughters of the Cincinnati 226
evacuation of objects during World War II 107
exhibits at 82
Harrington, Jean C. (Pinky) 274
Hopkins, Alfred 280
Hume, Ivor Noel 274
Lightfoot House 224
Moore House 224
Shiner, Joel 274
storage of collections 313
Watkins, C. Malcolm, work in 274
Wolcott, Stephen C., Collection 280
Colonial Williamsburg Foundation 21, 145, 224, 225, 250
Colter, Mary Elizabeth Jane 271
Committee on Study of Educational Problems in National Parks 43, 292
Company of Military Historians 122
Computerization 210, 258, 310
Conard, Henry S. 264
Cone, Laurence 121, 152
Congress
see U.S. Congress
Conservation
Fogg Art Museum 335
Conservation laboratories 336
Curatorial Methods Course—Phase II 205
Harpers Ferry Center 195
North Atlantic Region 361
removed from chief curator's oversight 360
treatment of objects for exhibits 213
Western Archeological Center 361
Conservation Laboratories, Branch of 211, 359
The Conservation of Prints, Drawings, and Manuscripts 340
Conservation treatment
by Museum Division 340
by park staff 126
collaboration between conservators and curators 336, 355
The Conservation of Prints, Drawings, and Manuscripts 340
contracting for 350, 361
early approaches to object restoration 335
empirical phase 337
environmental requirements of museum objects 319
Field Manual for Museums, addressed in 341
fumigation 37
of exhibited objects 131

of historic furnishings 233
International Institute for Conservation of Historic and Artistic Works 336
Jones, Elizabeth H. 343
Lamination 340
Leechman, Douglas, treatment of anthropological objects 338
Museum Preparation Memorandum No. 1 338
of natural history specimens 262
of waterlogged wood 347
scientific basis for 336, 342
paintings conservation laboratory 129
The Preservation of Antiquities, by Harold J. Plenderleith 338
see also Conservation Laboratories, Branch of 359
see also Museum Services, Division of 359
Conservators 343, 353
Conserve O Grams 206, 207
Consumptive use
experiments with Ferguson rifle, Kings Mountain NMP 93
Contracting 180
centralized procurement of storage equipment 315
conservation treatment 350, 361
for exhibit design and production 174
indefinite quantity contracts for supplies and equipment 207
Phillips, Frank 193
Cooley, Louise 352
Cooper, Jean 187, 194
Copley, John Singleton 279
Cotter, John C. 144, 274
Courtais, Henri G. 349
Cox, Elbert 20, 23
Craig, Vera B. 183, 210, 250, 307, 326
at Morristown NHP 126
Branch of Museum Operations, staff curator 165
constraints of Harpers Ferry Center building 191
furnishing plans 236, 243
housekeeping manual for furnished historic structures 246
Reference Services, Branch of, curator 201
Craighead, Frank C. 264
Crater Lake National Park 41, 54
Craters of the Moon National Monument 183
Crowninshield, Louise du Pont (Mrs. Francis B.) 19, 235
Cultural resources management
Cultural Resources Management Guideline 275
NPS performance scrutinized by Congress 213
relocation of chief curator 212
Cumberland Gap National Historical Park 251
Cumberland, Barbara (O'Connell) 211, 358
Cumberland, Donald R., Jr. 207
Cummings, Carlos 45, 90
Curation 165, 202
see Documentation
see Preservation and Protection
standards for 16
Curatorial activities
become focus of Branch of Museum Operations 165
interpretation of 22
Curatorial Methods Course 196, 204
see also Training
Curatorial Methods Course—Phase II 205
Curatorial Services Division
creation of, in 1982 214
furnishing plans, development of 246
Curatorial Services, Branch of 192
Curatorial standards, elevation of by Arthur C. Allen 202
Curator, chief 295
Hitchcock, Ann 299
Peterson, Harold L. 301
Curators
as exhibit designers, shortcomings of 88
as private collectors 121
collaboration with conservators 336
collateral duty 325
federal civil service, definition of 324
first civil service curator in NPS 96
Curators, regional 323
cataloging projects 307
conference of, 1974 211
exhibit repairs, determining priorities for 184
listed 323
training provided by 205
Custer Battlefield National Monument
see Little Bighorn Battlefield National Monument
Cuthbertson, Stuart 80, 89

Daniels, Mark 15
Daughters of the American Revolution 21, 225
Daughters of the Cincinnati 21, 226
Davis, William T. 75
Dawson, John W., 73
Deaccessions 295
proposed changes to the Museum Properties Act 299
see also Clearinghouse 301
Deckert, Richard 267
Degen, Carl G. 163, 175, 185
Degges, Ruth B. 93
Demaray, Arthur E. 60, 71, 120, 130
Demer, John 245
Denver Service Center 245
Derby House, Salem Maritime National Historic Site 229
Design and Construction, Western Office 153
Design
see also Exhibits, design of
Deterioration 317

Devils Tower National Monument 99
Dinosaur National Monument 149, 154, 265
Dioramas 18, 80, 101, 132, 144
Discipline specialists
  conflicts between 47
Disher, Kenneth B. 72, 79, 83
Dixon, Maynard 279
Documentation 52, 106, 302
  at Harpers Ferry Center 203
  automation of 310
  donor file 304
  early accessions procedures 37
  Manual for Small Museums 304
  Museum Records Handbook, implementation of procedures in 307
  NPS first standard museum record form 304
  of gifts and loans 297
  see also Accessions
  see also Classification
  see also National Catalog
Doerr, John E., Jr. 85, 94, 130, 132
Donations
  authority to accept 296
  donor file 304
  donor labels 226
  limiting conditions on 6
  restrictions on 296
  Sundry Civil Act of 1920 296
Dorman, Charles G. 240
Doty, Cecil 142, 313
Downey, Agnes
  see Mullins, Agnes
Downing, Paul H. 346
Dreyer, Charles W. 145
Dreyer, Kenneth 152, 193
Drury, Newton B. 108, 130
Dryfhout, John 327
Du Pont, Henry Francis 233
Dunmire, Ronald 194
Durham, H. Dale
  Clearinghouse, curator 203
  Southeast Region, regional curator 211, 324

Eakin, J. Ross 259
Eames, Charles 163
Eastern Museum Division 67
Eastern Museum Laboratory
  exhibits, maintenance of, circuit rider program for 188
  initiated 73
  Hendrickson, Russell, chief 165, 179
  move to Springfield, Virginia 181
  Stephen C. Wolcott Collection 280
  transferred to Branch of Museum Development 165
Edison National Historic Site 276
Education
  see Interpretation
Educational Advisory Board 59
Eisenhower National Historic Site 251
El Morro National Monument 18, 187, 337
Emergency planning
  Conserve O Grams 206
  Huth, Hans 107
  Wartime 107
Endangered species 267
Enten, Paul 145
Environmental awareness program 173
Environmental control 311, 318
  integrated pest management 320
Environmental monitoring
  supplies and equipment 207
  traveling monitoring kits 318
Environmental Projects, Division of 189
Equipment
  centralized assistance for obtaining 207
  see Storage equipment
Erskine, Donald J. 163
Estes, Earl W. 149
Ethics, Code of, for conservators 336
Ethnology collections 6, 268
Everard, Nathaniel 72
Everett, Rolla D. 165
Everglades National Park
  Beard, Daniel B., superintendent 149
  collections, donated 267
  collections, study 266
  Craighead, Frank C. 264
  Petuch, Ed 267
  Pilsbury, Henry A. 266
  Say, Thomas 266
Everhart, William C.
  advocate of audiovisual media in museums 175
  Division of Interpretation and Visitor Services, chief 174
  Harpers Ferry Center, director 189
  interpretation, assistant director 185, 197
  interpretive changes implemented by 163
  Jefferson National Expansion Memorial, historian 156
Ewers, John C. 83, 90
  in Bureau of Indian Affairs 94
  Interior Museum exhibits 80
  Ocmulgee NM, acting superintendent 94
  at Vicksburg NMP 73
Excavations
  see Archeology
Exhibit cases 160, 339
  circa 1937 88
  developed by Western Museum Laboratories 104
  for study collections 139
  Phillips, Frank 151
  production by Harpers Ferry Center 190
  Remington Rand, Inc. 69
  Russell, Albert Brill 69
Exhibit Development, Branch of 193

Exhibit labels 88, 98, 103, 163
early, in Yosemite NP 36
ensuring accuracy of 41
in furnished historic structures 226
lack of 177
minimal use of 178
production at Harpers Ferry Center 190
Exhibit lighting 88, 98
"black box" controversy between architects and curators 151
fiber optics 180
Exhibit panels 123, 160
production by Harpers Ferry Center 190
Exhibit planning 36, 72
collaboration between curators and architects 150
collaboration between curators and designers 144, 200
contracting for 175
curatorial role in 327
curators, staff (museum design) 325
interdisciplinary review of plans 150
Museum Development Plan 57
park staff involvement in 104
Plans and Design, Branch of 57
team approach to 147
turning point, in 1955 142
use of design models in 180
visitor behavior influences design of exhibits 161
see also Exhibit Development, Branch of
Exhibit Planning and Design, Branch of 200
processing of objects through Harpers Ferry Center registrar 202
see also Exhibit Development, Branch of
Exhibit preparation 190
Burns, Ned J. 75
contracting for 147
Hall, Ansel F. 50
Lafayette Hall 73
of natural history specimens 37
Exhibit Production, Branch of
loss of staff due to move to Harpers Ferry Center 193
processing of objects through Harpers Ferry Center registrar 203
Exhibit standards
early, in Yosemite NP 35
Burns, Ned J. 87
Exhibit techniques
changes evident in Jefferson National Expansion Memorial 98
curved background 32
dioramas 18, 79, 101, 132
graphics produced by eyewitnesses, use of 123
habitat groups 35
"hands-on" 35
material culture, use of 48
objects, use of 162
random viewing 178
replicas 21
sequential display 131, 174
supergraphics 178
topographic models 55
quotations, use of 177
Exhibits 48
affective 174
Bumpus, Hermon C. 32
didactic 18, 174
environmental concerns of 69
goals of, in 1929 52
maintenance of 100, 124
media 72
mixing formal exhibits with furnished rooms 228
Museum Division, primacy in development of 105
NPS policy on centralized design of 51
national parks, early exhibits in 2
objects, increased use of 123
orientation to parks through 35, 123
propaganda, susceptible to use as 173
production of, in Berkeley, CA 50
rate of obsolescence 199
standards for 35, 42, 87
timely replacement of 124
traveling 3
Yellowstone NP 7
see also Exhibit planning
Exhibits, acquisition of objects for 152
Exhibits, design of
"black box" controversy between curators and architects 151
Bicentennial innovation, Franklin Court an example of 198
at Harpers Ferry Center 190
collaboration between curators and designers 143
contracting for 180
Design and Construction, Western Office 153
didactic and affective 174
during Mission 66 160
Exhibits, Division of (1974-1980) 197
influenced by William C. Everhart 177
interdisciplinary collaboration 165, 238
Kings Mountain NMP for synopsis 177
purview of curators 88
transferred to Branch of Museum Development 165
see also Eastern Museum Laboratory
see also Exhibit Development, Branch of
see also Western Museum Laboratory
Exhibits, Division of 200
accomplishments 198
Hendrickson, Russell J., chief 197
Price, Raymond S., wayside exhibits chief 197
strengths and weaknesses of 200
Exhibits, evaluation of 134, 177
Guthe, Carl 161
Screven, Chandler 178

Wolf, Robert 178
Exhibits, maintenance of 183, 194
circuit rider program for repair and rehabilitation 188
contracted rehabilitation 194
Exhibit Room Inspection Checklist 184
funding for 184
Exhibits, policy
early, in Yosemite NP 35
Field Manual for Museums 185
Museum Handbook, Exhibit Maintenance and Replacement (Part IV) 185
Exhibits, temporary 100
Exhibits, traveling
Indian Pride on the Move 199
Nichols, Robert 193
Exhibits, wayside 136
in Yellowstone NP 43
nature trail museums 39
role of Museum Division in development of 106
Wayside Development, Branch of 188
Wayside Exhibits, Branch of 200

Fagerlund, Gunnar O. 163
Fairbanks, Charles 131
Farquhar, Francis P. 8
Feaser, Daniel D.
Exhibit Development, Branch of 193
exhibit planner for Mission 66 148
exhibit preparator 151
Harpers Ferry Museum Support Group 188
retirement of 200
Wayside Development, Branch of 189
Federal Art Project 101
Federal Hall National Memorial 129, 132, 285
Feller, Laura 211
Ferguson, Patrick 93
Fewkes, J. Walter 12, 14
Fiber optic lighting 180
Field Division of Education 49, 56, 98, 338
see also Western Museum Laboratories
Field Manual
storage for study collections 312
Field Manual for Museums 106, 185, 206
conservation treatment 337, 341
environmental control 318
format for accession and catalog forms 305
fumigation 320
furnished historic structures 230
publication of 95
scope of park collections 292
storage of collections 315
Finley, David 232
Fiore, Rosario 73, 97
Firearms 93, 279
storage of 316
Fire protection
early fireproof structures 8
first fire-safe museum building 17
see also Preservation and Protection
First Park Naturalists' Training Conference 303, 314
Fischer, Marian S. R. 154
Fiske, John 12
Fleming, Mildred 186, 187
Flesch, Richard A. 93
Flett, J. B. 11
Flickinger, B. Floyd 20
Florissant Fossil Beds National Monument 251
Fogg Art Museum Department of Conservation and Technical Research 335
Forbes, Edward W. 335
Ford's Theatre Laboratory 87, 90
Ford's Theatre National Historic Site 24, 109
cataloging of collection 308
collections in 285
conservation treatment of objects 340
Lincoln Museum 176, 226
reconstruction of stage and auditorium 175
Ford Mansion (Morristown NHP) 23, 221
Ford, John A. 140
Forgang, David 323
Forms 304
Fort Caroline National Memorial 284
Fort Davis National Historic Site
conservation treatment of collections 351
furnishings plan for 251
Fort Hunt Laboratory 83, 90, 96
Fort Jefferson National Monument 229
Fort Laramie National Historic Site 229, 239, 283, 351
Fort Larned National Historic Site 251
Fort McHenry National Monument and Historic Shrine 68
Bowie, E. Berkley Firearms Collection 279
evacuation of objects during World War II 107
exhibits at 82
furnished historic structure 227
Lessem, Harold, historian 126
National Society of the United States Daughters of 1812 228
Fort Necessity National Battlefield 250, 347
Fort Pulaski National Monument 107, 229
Fort Raleigh National Historic Site 180
Fort Scott National Historic Site 251
Fort Sumter National Monument 285
Fort Vancouver National Historic Site 274, 275
Fossil Cycad National Monument 264
Fossils 99, 264
Fox, Suzanne 307
Franke, Paul R. 17
Franklin Court (Independence NHP) 198
Franzen, Ulrich 182, 190
Frederick Law Olmsted National Historic Site
archival/manuscript collection 277
conservation treatment of collections 361
Fredericksburg and Spotsylvania County Battlefields Memorial National Military Park 86

Johnson, R. W., Collection 280
Stonewall Jackson Memorial Shrine 249
Frost, Bartlett 100
Fry, Walter 9
Fryxell, Fritiof M. 53, 79, 104
Fulcher, Maxwell S. 80
Fulcher, Robert A. 194
Fuller, Claud E. and Zenada O., Collection at Chickamauga-Chattanooga NMP 280, 347
Fumigation 37, 314, 319
Funding 17
Carnegie Corporation 41
Civil Works Administration 56
Emergency Educational Program 56
Federal Emergency Relief Administration 56
for maintenance and rehabilitation of exhibits 184
for storage equipment 316
Laura Spelman Rockefeller Memorial 29, 31, 38, 42
post-World War II recovery 118
Public Works Administration 55, 91, 100
State Emergency Relief Administration 56
termination of Public Works Administration monies, effect of 82
Funkhouser, Clifton 194
Furnished historic structures 19
aesthetics as a guide to furnishing 21
alternatives to furnishing 227, 250
barriers in 249
Civilian Conservation Corps involvement in preservation 223
Coleman, Laurence Vail 222
criteria for furnishing 250
decorative arts, emphasis on 230
definition of historic house museum by NPS, in 1952 234
early lack of guidelines for 223
furnishing, interpretation, and operation of 247
informal study of 247
mixing formal exhibits with furnished rooms 228
national ownership a new development 222
NPS *Management Policies* limits development of, in 1978 251
NPS statistics regarding, in 1940 230
outside interest in development of 231
preservation and protection of 249
primary significance based on associative values 221, 230
quality control over 248
safety in 249
see also Structures
Furnishings
funded by Public Works Administration 59
Furnishings plan
Bailey, Worth, for Natchez Trace Parkway, Mount Locust 238
content of 238, 244
Craig, Vera B. 201, 237
development of 235
for houses with original furnishings in situ 246
historic furnishings reports 225, 235
Historic Furnishings, Division of (1984) 202
historic structure report, relationship to 241
integrity of, maintaining 244
Mullins, Agnes (Downey) 239
oversight by Museum Division 106
Reference Services, Branch of 197, 201, 245
review process for 237, 241
revised guidelines for, 1965 244
Wallace, David 201, 245
Furnishings, period 19, 225, 282
Furnishings, reproduction 283

Gale, Bennett T. 142
Garcia, Francisco G. 154
Gateway Arch 174, 199
Gay, Gordon V. 209, 210, 323
General Federation of Women's Clubs 235
General Grant National Park 9
General Land Office exhibits in Interior Museum 79
General management plan 293
Geology, Grand Canyon NP 40, 262
George Washington Birthplace National Monument 19, 89
conservation treatment of collection 338, 348
environmental control 318
exhibits at 82
Wakefield National Memorial Association 223
George Washington Memorial Parkway
see Arlington House
Gettens, R. John 342, 353, 361
Gettysburg National Military Park 341, 349
Giantomassi, Carlo 361
Giant Forest Museum Association 9
Gibbs, Ron A. 192
Gifford, Clay L. 260
Gifts
see Donations
Gila Pueblo Archeological Foundation 269
Glacier National Park 94, 183
Gleason, Vincent L. 175, 182, 185
Glen Canyon National Recreation Area 187
Golden Gate National Recreation Area 284
Goldstein, Jeffery 211, 358
Gran Quivira NM 18
Grand Canyon National Park 11, 106, 141, 325
Bryant, Harold 84
collection, archeological 270
collection, maritime 284
collection, study, scope and significance of 262
conservation treatment of collections 347, 351
Doty, Cecil 142
Hinchcliffe, Louise 263

Maier, Herbert 40
McKee, Edwin D. 262
museum at Yavapai Point 38, 54
Schellbach, Louis 263
Yavapai point museum 199
Grand Portage National Monument 251
Grand Teton National Park 104, 155, 199
collection, ethnographical 273
Colter Bay Visitor Center 273
Fryxell, Fritiof M. 53
Indian Arts Museum 194
Jenny Lake Museum 99
Mattes, Merrill J., museum prospectus for 155
museum non-site specific 155
Vernon, David T., Collection 273
Graphics 178
see also Interpretive media
Grater, Russell 317
Great Smoky Mountains National Park 73, 251, 295
Biosphere Reserve, designated a 261
collection, condition of 262
collection, scope and significance of 260
collection, study, development of 258
Kendall, Arthur I., donation 280
Oconaluftee 139
researchers in 260
staff, list of 258
storage space for collection 261
type specimens 259
Grinnell, Joseph 2, 36, 315
Guggenheim, Charles 175
Guidelines for museum management
Cultural Resources Management Guideline 275
Field Manual for Museums 185
Interpretive Planning Handbook 294
Manual for Museums 206
Museum Handbook 185
Museum Records Handbook 307
Guilford Courthouse National Military Park 73, 87, 118, 126
Guthe, Carl E. 161
Gyer, Jack 325

Hadley, Daniel J. 145
Haggett, Hiram R. 148
Hakala, D. Robert 154
Hale, Edward Everett 12
Hall, Ansel F. 3, 7, 49, 85, 295
development of Yosemite Museum 29
documentation of collections 303
funding for "equipping" museums 99
museum exhibit production, facility for 50
professionalization, catalyst for 29
resignation from NPS 101
Halverson, Timothy 205
Hamlin, Chauncey J. 8, 29, 90
Hammett, Sara 211
Hampton National Historic Site 232, 346
Hanson, Frederick B. 240
Hansen, Julia Butler 275
Harbison, T. G. 259
Harding, Chester 279
Harper House, Harpers Ferry NHP 243
Harpers Ferry Center 182, 189
accountability for objects 202
conservation laboratories 195
construction of 187
Environmental Projects, Division of 189
library 196
Shipley School 195
staff of 197
structure 190
Harpers Ferry National Historical Park 204
Harper House 243
Museum Support Group located in 354
Staubs, Hilda E. 328
storage of collections 317
Harrington, Jean C. (Pinky) 22, 144, 338, 347
Harrington, Mark R. 101
Harris, Harry H. 194
Harris, William T. 12
Hartzog, George B., Jr.
abrogation of NPS handbook series 251
Jefferson National Expansion Memorial, superintendent 156
interpretive design and production center, support for consolidated 182
management survey of Museum Branch, ordered by 164
Hastings, Russell 100
Hauschildt, Kurt 351
Hawaii National Park 129, 149
Hawaii Volcanoes National Park 199
Hawthorne, Nathaniel 229
Hayden Yellowstone expedition 80, 279
Haynes, Jack E. 11
Hazards
see Emergency planning
Hemenway, Mary 12
Hendrickson, Russell J. 179, 200
Eastern Museum Laboratory, chief 165
exhibit planner for Mission 66 148
exhibit preparator 141, 145
Exhibits, Division of, chief 197
Harpers Ferry Center building, deficiencies of 191
Museums, Division of, chief 185
Herber, Mary 194
Hesler, L. R. 260
Hewett, Edgar Lee 14, 16, 18
Hilgard Hall 105
Hill, Mrs. Charles S. 239
Hill, Thomas 278
Hillery, Nancy 211, 358
Hinchcliffe, Louise 263
Historic Furnishings Report 224, 235
see Furnishings plan
Historic Furnishings, Branch of

criteria for furnishing historic structures 251
Reference Services, Branch of 197, 201, 245
Historic Furnishings, Division of
established 1984 202
Historic house museum 221, 234
see Furnished historic structures
Historic House Museums 222
Historic preservation 221
Historic Sites Act of 1935 24
Historic Sites and Buildings, Branch of 80
Historic structure preservation guides 208
Historic structure report 224, 241
Historic structures
used as museums 138
see Structures
see Furnished historic structures
Historical archeology 19
at George Washington Birthplace NM 89
Harrington, Jean C. (Pinky) 22
see also Collections, historical
Hitchcock, Ann 213, 262, 360
Curatorial Services Division, chief 210
Museum Clearing House 302
Museum Properties Act, proposed revision of 299
Hoffman, John J. 275
Holland, F. Ross, Jr. 212
Holler, Carol 207
Holloway, Maxson 121
Holmes, Oliver Wendell 12
Home of Franklin D. Roosevelt National Historic Site 233, 279, 282
Hopewell Furnace National Historic Site (Hopewell Village) 229, 243, 299
Hopkins, Alfred F. 97
at Colonial NHP 89, 225, 280
Ferguson rifle, experimentation with 94
Morristown NHP, curator 325
research at Colonial NHP 22
Hot Springs National Park 73, 82, 86
Hough, Emerson 7
Housekeeping 240, 248
Howard, Richard M. 155
Hoyt, E.W.W. 69
Hubbard, Douglass H. 185
Hubbell Trading Post National Historic Site
archives/manuscripts 276
Bradley, Betsy Hunter 208
collections 271
first NPS Collection Management Plan 208
furnishings plan for 251
furnishings 283
paintings 279
Hudson, J. Paul 80, 92, 123, 326
at George Washington Birthplace NM 20, 338
curator, first civil service, appointed to NPS 96
involved in writing *Field Manual for Museums* 95
Human remains, display of 199
Hume, Ivor Noel 274
Humes, Ralph H. 267
Hunt, William Morris 279
Hunter, John E. 324
Huth, Hans 107, 232
Hyde, Benjamin T. B. 39

Ichelson, David 149, 154, 187
Ickes, Harold L. 55, 78, 94, 229
Imrey, Frank 84
Independence National Historical Park 137, 198, 234, 251, 283, 301
Army-Navy Museum 188
Bishop White House 240
Carpenter's Court 275
collections, archeological 275
conservation treatment of collections 344, 348
Crowninshield, Louise du Pont 235
environmental control 318
Franklin Court 198, 275
General Federation of Women's Clubs 235
Independence Hall, restoration and furnishing of 234
Independence Square 275
Liberty Bell 284
Peale, Charles Willson, paintings by 277
Philadelphia Custom House 229
Second Bank of the United States 278
Sharples, James, Sr., paintings by 277
staff of 235, 240
Todd House 240
Indian Affairs, Bureau of 79, 94
Infestation 319
Ingram, Sois 193
Inman, Henry 279
Inspector general, report on accountability of collections, 1981 204
Insurance for incoming loans 299
Integrated pest management 320
Interior, Department of the
change in organizational names 117
museum 56, 78-82
new seal for 175
Office of Exhibits 90
International Association of Museums of Arms and Military History 122
International Institute for Conservation of Historic and Artistic Works 336, 350
International Petroleum Exposition 104
Interpretation
authenticity of, problems with 19
Brockman, C. Frank 16
of excavations 22
animation in, use of 100, 103
Committee on Study of Educational Problems in National Parks 43
early tours 18
effectiveness of exhibits in 106

environmental awareness program 173
exhibit media 21
First Park Naturalists' Training Conference 51
focused on visitors 32
impact of barriers to protect objects upon 249
in furnished historic structures 248
Interpretive Planning Handbook 294
living history 145, 173, 201, 243
Museum Handbook, Part III 250
museums a part of NPS 16
museums as first step in 35
nature trails 38
objectives of 40
objects, role in 48, 86, 106
Plan of Administration for the Educational Division 51
Planning and Interpretive Services 185
role in promoting patriotism during World War II 109
secondary themes in museums 43
staffing 40
techniques for use in furnished historic structures 250
telescopes 40
Interpretation and Visitor Services, Division of 163, 174, 181
Interpretation, Division of 158, 163
Interpretive media 40
audiovisual 145, 164
Branch of Motion Pictures and Audiovisual Services 163
Degen, Carl G. 163, 175, 185
film 175
Guggenheim, Charles 175
museums 202
new emphasis on 164
sound and light programs 176
Interpretive planning 56, 175
curatorial role in 327
early, in the Grand Canyon 40
Interpretive Planning Handbook 294
interpretive prospectus 294
Kent, Alan 197
Interpretive standards 164
Inventory with Classification and Work Code for Historic Buildings 241

Jackson Hole Preserve, Inc. 273
Jackson, William Henry 80, 128, 279
Jahn, Otto H. 73
Jahns, Edward D. 155, 323
Jakstas, Alfred 344
Jansen, Richard H. 151
Jansson, Arthur A. 80
Jedlick, William J. 324
Jeep, Fred 15
Jefferson National Expansion Memorial 91, 109
conservation treatment of collections 347
Gateway Arch 199
Hartzog, George B., superintendent 156
Museum of Westward Expansion 174, 199
Old Courthouse 97, 229, 348
Saarinen, Eero 174
Jenkins, John W. 129, 149, 158, 182
Jennison, Henry 259
Jesup, Morris K. 32
Jett, T. Sutton 232, 233
John Day Fossil Beds National Monument 266
John Muir National Historic Site 251
Johnson, Anna 211, 357
Johnson, Donald M. 80
Johnson, John B. 155
Johnson, Eastman 279
Johnson, R. W., Collection of Civil War weapons 280
Johnson, Sally 239, 326
Johnsson, Robert G. 193, 197
Jones, Archie 267
Jones, Elizabeth H. 343
Jorgensen, Christian 4, 278
Joshua Tree National Monument 138
Joyner, Newell F. 307, 323
Judd, Henry A. 238

Kahler, Herbert E. 130
Kallop, Edward L., Jr. 205, 212, 324
Kamikawa, Juichi 129
Kay, William K. 324
Kegler, C. Kenneth 154
Kelly, Arthur R. 270
Kendall, Arthur I. 280
Kent, Alan E. 148, 156, 197
Kerns, Betty C. 207, 210
Ketcham, Sally Johnson 155, 326
Keyes, Keiko Mizushima 360
King, Charles Bird 279
King, Willis 259
Kings Mountain National Military Park 93, 118, 177
Kitti, Peder 145, 194, 200
Knapp, Ruth Matzkin 240
Kohan, Carol 211
Kovacs, Helene 352

La Purisima Mission State Historical Park 105
Labels, exhibit
see Exhibit labels
Laboratories 22
see Conservation laboratories
see Eastern Museum Laboratory
see Western Museum Laboratory
Lafayette Hall 73
LaFayette, Floyd A. 137, 142, 158, 186
curator 129
exhibit planner for Mission 66 148
Western Museum Laboratory, acting chief 182

Western Museum Laboratory, assistant chief 157
Lake Mead National Recreation Area 97, 351
Lance, James K. 211
Lane, Franklin K. 3, 292
Lantern slides 58
Lassen Volcanic National Park 103
Laws
Antiquities Act, 1906 13
Historic Sites Act, 1935 24, 299
Management of Museum Properties Act, 1955 299
Sundry Civil Act, 1920 296
Lee, Ronald F. 40, 85, 130, 163
in Branch of History 92
Chief Historian 125
Independence Hall project 235
manual for protecting objects from hazards of war 107
Mid-Atlantic Region, regional director 158
Leechman, Douglas 338
Leigh, William R. 279
Legal issues in museum management 204
Leisch, Joseph 194
Leland, Waldo G. 59, 106
Leng, Charles W. 75
Lessem, Harold 126
Leviston, Stella M. 17
Lewis, Dorothy 209
Lewis, Ralph H. 73, 84, 90, 120
Collection Management Plan, preparation of 208
conservation treatment 340
exhibits, evaluation of 162
Field Manual for Museums 95
furnishings plan, Andrew Johnson NHS 236
Interior Museum exhibits 80
Manual for Museums, author 206
Museum Branch, Chief 138
Museum Operations, Branch of, chief 165, 194
Lewis, Washington B. 4
Library material 308
Liggan, Willie 129, 193
Lighting, exhibit 88, 98
"black box" controversy between architects and curators 151
fiber optics 180
Lillie, Alfred Lloyd 151
Lillis, David 129, 154
Lincoln Home National Historic Site 251
Lincoln, Abraham 228
see also Ford's Theatre NHS
Linton, Earl 16
Little Bighorn Battlefield National Monument
funding for construction of new museum building 128
Luce, Edward S., superintendent 131
storage for collections 313
Living history 173, 201, 243
Lix, Henry 260
Loans
incoming 20
insurance for 299
parks discouraged from accepting 296
Lodge, Mrs. Henry Cabot 12
Longfellow National Historic Site 282
Loomis Memorial Museum 104
Los Angeles County Museum 13
Luce, Edward S. 131
Luce, Mrs. Edward S. (Evelyn) 131
Lutz, Frank 38
Luzader, John F. 148
Lyndon B. Johnson National Historical Park 238

Macy, William 96, 97, 107, 118
Maier, Herbert 8, 55, 154
AAM executive agent 38
architectural design for Yavapai Point museum, Grand Canyon NP 40
architectural plans for Yosemite NP 34
construction of museums by 76
exhibits, evaluation of 162
Maintenance staff role in maintaining furnished historic structures 248
Mammoth Cave National Park 82, 138, 339
Man and the Biosphere Program 261, 322
Management of Museum Properties Act 299
Management Policies
Cultural Resources Management Guideline 275
National Park Service *Management Policies* 251
Manassas National Battlefield Park 94, 118, 122, 188, 239
Manscill, Kathleen L. 328
Manual for Museums 206
environmental control 319
fumigation 320
housekeeping 248
scope of park collections 292
see also Museum manuals, National Park Service
Manual for Small Museums 51, 222, 314
Manucy, Albert C. 148
Manuscripts 268, 275, 308
The Conservation of Prints, Drawings, and Manuscripts 340
Maps
electric 124
relief 7, 55
storage of 316
Marcionetti, Vincent 194
Mariners Museum, Newport News, VA 22
Marshall, Robert B. 15
Martin, Basil E. 74
Martin, Herbert F. 149, 187, 194, 210
Master Plan 57, 293
Material culture 239, 268, 282, 325
Mather, Stephen T. 2, 3, 13, 292

Mather Training Center 127, 182
Curatorial Methods Course 196, 205
Mattes, Merrill J. 155
Matthes, Francois E. 7, 104
McCain, Forrest 165
McCarter, Kenneth 223
McClure, Albert 80, 120, 233, 326
McClure, Stanley 232
McDonald, Thelma Wolfrey 194
McDougall, Walter B. 263
McHenry, Donald E. 229
McKee, Edwin D. 41, 262
McLean House, Appomattox Court House NHP 242
McLean, David 180, 193
McManus, Edward 205, 358, 361
McWhorter, Lucullus V., Collection at Nez Perce NHP 272
Mead, Wilfred J. 74
Meader, Forrest 193
Media, interpretive
see Interpretive media
Menz, Katherine 245
Merriam, John Campbell 31, 40, 54, 143, 262, 292
Mesa Verde National Park 11, 99
Bohnert, Allen 328
collections, archeological 268
documentation, lack of 302
Civilian Conservation Corps in 17
Colter, Mary E. J., Collection 271
Gila Pueblo Archeological Foundation 269
Nordenskiold, Gustaf 14
Nusbaum, Jesse 268
Rockefeller, John D., Jr. 17, 268
Watson, Don 272
Wetherill Mesa Archeological Project 269
Metropolitan Museum of Art 173
Michael, Enid 4
Mid-Atlantic Region 324
Midwest Region 324
Miller, Loye H. 4
Miller, Leffler 76
Miller, Lige B., Jr. 193
Milley, John C. 240
Mindeleff, Cosmos 12
Mines, Bureau of 79
Minute Man National Historical Park 198, 350
Miragoli, Ettore 348
Mission 66 117
accomplishments of first four years 159
museums renamed "visitor centers" 147
style of exhibits 160
Moffett, Lorenzo 105
Monitoring, environmental 207
Montezuma Castle National Monument 136
Montgomery, Charles F. 235
Moore House 21, 89, 224
Moran, Ruth B. 278
Moran, Thomas 278, 349
Morishige, Dick T. 154, 187
Morley, Charles R. 278
Morristown National Historical Park 23, 87, 198, 305
conservation treatment of paintings 339
curator, first NPS civil service appointed 96
Ford Mansion 221
Museum Records for Morristown Museum 305
Ronalds, Francis, superintendent 276
Smith, Lloyd W., manuscript collection bequeathed by 276
Washington Association of New Jersey 221
Wick farmhouse 228
Motion Pictures and Audiovisual Services, Branch of 163, 175
Mound City Group National Monument 124
Mount Rainier National Park 11, 103, 105, 183
Mulcahy, James M. 118, 121, 200
Eastern Museum Laboratory 158
Exhibit Development, Branch of 193
Independence National Historical Park, curator 136, 326
Muller, Hugh Bell 260
Mullins, Agnes (Downey) 239, 326
Murray, Arlton C. 151
Munro, Susan Nash 359
Museum Branch 117
collaboration with History Division 125
conservation treatment, funding for 343
contracting for goods and services 158
development of informational displays 140
furnished historic structures 231
international collaboration (UNESCO) 150
joins Division of Research and Interpretation 158
laboratory, post-World War II 120, 137, 152
Lewis, Ralph H., chief 138
Museum Handbook 206
Museum Development, Branch of 165, 179
Museum Study Team evaluation of 165
scope of collection statement, development of 293
status raised by Service reorganization, 1953 138
storage of collections 315
see also Museum Division (pre-1947)
see also Museum Operations, Branch of
see also Western Museum Laboratory
Museum Clearing House 301
Museum Development Plan 57
Museum Development, Branch of 179
Exhibit Production, Branch of 186, 193, 203
Planning and Development, Branch of 186
restoration of Ford's Theatre 176
see also Eastern Museum Laboratory
see also Western Museum Laboratory
Museum Division 29, 105, 117
Burns, Ned J., chief 84
conflicting priorities affecting 85
conservation treatment of objects by 340

establishment of 77
funding curtailed, 1936 82
furnished historic structures 229
manual 95
name changed to Museum Branch of the Natural History Division 117
NPS museum program, status of, 1937 85
relationship to park staff 88
staff reduced during World War II 97
storage of collections 315
survey of status of NPS museum program, 1939 96
Museum Handbook
archives and manuscripts 276
collections management, definition of 291
environmental control 319
Exhibit Maintenance and Replacement (Part IV) 185
fumigation 320
Part III, Interpretation 250
photographs, historic 276
storage of collections 317
Museum manuals, National Park Service
Book of Museum Procedure 95
by Alden Stevens 94
see also Field Manual for Museums
see also Manual for Museums
see also Museum Handbook
Museum of New Mexico 16
Museum of the City of New York 173
Museum of Vertebrate Zoology in Yosemite NP 2
Museum of Westward Expansion 199
Museum Operations, Branch of 183
acquisition and authentication of objects for exhibit 183
care of David T. Vernon Collection, Grand Teton NP 273
conservation laboratories 195
conservation treatment, contracting for 350
exhibit maintenance 185
Ford's Theatre, restoration of 175
furnished historic structures, informal study of 247
Lewis, Ralph H., chief 165
Museum Handbook 206
Peterson, Harold L., chief curator 165
records program, central staff supervision of 310
storage of collections, example of 317
under Division of Museums 186
Museum Properties Act 299
Museum prospectus 293
Museum publications
see Publications, museum
Museum Records Handbook 307, 308
Museum Services, Division of 202-214
environmental monitoring kits for parks 319
scope of collections, development of 294
Conservation Laboratories, Branch of 359
storage of collections 317
Museums in parks
as vehicles of social change 173
Congressional support for 41
construction of 76, 128
development of 1,11
diminished role of historic objects in 72
early efforts to keep artifacts on site 17
exhibits, early emphasis on 48
furnished historic structures 19
guidelines for 71
in archeological parks 11
in historical parks 24
in natural parks 1, 9, 38
information bureaus-with-exhibits 9
legal authority to operate 24
location of 36, 40
mission, role in accomplishing 52, 164, 173
multipurpose structures 147
orientation through 35
outside interest in development of 9, 221, 247
Public Works Administration funds for construction of 55
secondary themes in 43
visitors, focus on 32
see also Architecture
see also Collections
see also Exhibits
see also Furnished historic structures
Museums, Division of 185, 192
Harpers Ferry Museum Support Group 187
see also Museum Branch
see also Museum Division

Nagel, Charles 235
Natchez Trace Parkway 238
Nathanson, David 201, 202
National Academy of Sciences 41
National Archives 197
National Capital Park and Planning Commission 141
National Capital Region 204
Bauss, Rudolf W. 97
Old Stone House 249
White House furnishings 231
National Catalog 258, 310
impetus for standardization of classification system 210
proposal for 209
staff of 209
National Collection of Fine Arts inventory 279
National Maritime Museum, San Francisco 284
National Museum 12, 141, 265, 315
documentation system 306
type specimen from Great Smoky Mountains NP in 259
National Museum of Canada 337
National Park Conference, Fourth (1917) 3

National Park Service
Administrative Manual, 1949 234
Chief Curator 213, 295, 299, 301
collections as resources 202
conservation, interpretation and use 158
expansion of 173
historians, first appointed 20
museums as interpretive media 173
Organic Act, 1916 267
policy-making for museums 49
regionalization of 55
see also Policy
National Park Service archives 197
National Park Service collections
NPS History Collection 201
status of, 1976 208
see also National Catalog
National Parks Educational Committee 3
National Resources Planning Board
see World War II
National Society of the United States Daughters of 1812 228
National Trust for Historic Preservation 232
Natural Bridges National Monument 187
Natural resources collections 258, 314
Nave, Olin 194
Navy League of the United States 188
Nelligan, Murray 233
Neutra, Richard 349
Nez Perce National Historical Park 272, 273, 313
Nichols, Robert F. 180, 188, 193
Nicholson, Diane 323
Nitkiewicz, Walter J. 210, 344
Nomenclature for Museum Cataloging 210
Non-federal repositories 261, 276
Nordenskiold, Gustaf 14
Nordquist, Gus 36
Normandin, Edward W. 146
North Atlantic Region 205, 324, 361
Northeast Region 323, 324
Nusbaum, Jesse 16, 76, 268, 312

O'Meara, Arlie P. 151, 193
Ober, Gerald 149, 183
Objects
acquisition for exhibit 152
lack of in park exhibits 106
packing 203, 343
sacred 199
shipping of 203
use of in exhibits 123, 162, 177
Obwald, Laura D. 154
Ocmulgee National Monument 128, 257
cataloging of archeological materials 306
Ewers, John, acting superintendent 93
storage for collections 312
Ohlman, Arthur 73, 90
Old Courthouse, Jefferson National Expansion Memorial 229
Old House, Adams NHS, furnishings in 282
Old Stone House, National Capital Parks 249
Oldroyd, Osborn H. 24, 226
Olsen, Robert W. 194, 207, 210
Olson, Sarah M. 245
On-site collecting 261
Organ, Robert M. 353
Orozco 279

Pacific Northwest Region 324, 361
Packing 203, 343
Page, D. W., Captain 100
Pageant of America 72
Paintings , conservation of 340
see Collections, art
see individual artist's names
Paleontology 99, 264
Palisades Interstate Park 38
Panels, exhibit
see Exhibit panels
Paradichlorobenzene 320
Pardue, Diana 207
Parker, Harry C. 157
Parkman, Francis 12
Parks
abolished, due to destruction of resource 265
archeological 11
as museums 34, 48, 52
bicentennial development projects for 198
exhibits in, establishing credibility for 80
historical 18, 72
military 72
Moran, Thomas, influence of paintings on establishment of 278
museum of nature 2
role in promoting patriotism during World War II 108
urban 173
see also Museums in parks
Paskowsky, Michael P. 209
Peale, Charles Willson 277, 279
Pearson, Edwin 129
Performing arts 176
Permits 261
Perrot, Paul 212
Perry, Bernard 154, 186
Perry, Shaw and Hepburn 224
Pesticide 320
Petersburg National Battlefield 180
Peterson, Charles E. 76, 92, 223, 224, 236
Peterson, Harold L. 125, 144, 183, 201, 248
Arms and Armor in Colonial America 121
conservation treatment of objects 342
Museum Branch, evaluation of 164
Museum Development, Branch of, acting chief 166
Museum Operations, Branch of, chief curator 166
Museum Operations, objections to move to Harpers Ferry Center 192

Petrified Forest National Monument 99, 264, 306
Petuch, Ed 267
Pfanz, Harry W. 245
Pfitzer, Donald W. 260
Philadelphia Custom House 229
Phillips, Frank 151, 186, 194, 349
Photographic History of the Civil War 72
Photographs 308
Photographs, historic 276
Pierce Mill, Rock Creek Park 229
Pilsbury, Henry A. 266
Pine, Robert Edge 235
Pinkley, Frank 12, 18, 223
Pioneer History Center, Yosemite NP 242
Pipe Spring National Monument 18, 104, 223
Pipes, Henry F., Lieutenant 1
Pipestone National Monument 272
Pitkin, Thomas 93, 156
Planning and Development, Branch of 186
Planning and Interpretive Services, Division of 185
Planning documents
  Checklist for Museum Planning, 1943 108, 312
  Collection Management Plan 208, 294, 313
  Collection Preservation Guide 242
  Collection Storage Plans 313
  Denver Service Center 245
  Master Plan 57, 293
  Museum Development Plan 57, 72
  see also Furnishings Plan
Planning, emergency 102, 107, 206
Planning, exhibit
  see Exhibit planning
Planning, interpretive
  see Interpretive planning
Plans and Design, Branch of 57, 76
Plenderleith, Harold J. 338, 340
Policy
  archeology, refinement of excavation and survey techniques for 275
  cooperating associations, influence on 19
  Cultural Resources Management Guideline 275
  development of, ca. 1940 105
  directives, consolidation of, in 1940 235
  Field Manual for Museums 95, 106, 185, 206, 230
  for accessioning 291
  for exhibits 35, 185
  furnishings plans, implementation of 245
  guidelines for NPS museums 71
  Integrated Pest Management 320
  Interpretive Planning Handbook 294
  loans, parks discouraged from accepting 296
  Management Policies 295
  Manual for Museums 206, 248
  Museum Handbook 185, 250
  museum objects, historic furnishings defined as 231
  storage, of study collections 317
Pope, John Russell 76
Pound, Jack 208, 257
Prehistoric Indian Mounds State Park 140
Preservation and protection 311, 335
  barriers 249
  design considerations a threat to 178
  equipment and supplies 207
  infestation 319
  in furnished historic structures 249
  manuscripts 276
  packing 203
  photographs, historic 276
Preventive conservation 240, 248
The Preservation of Antiquities 338
Price, Jackson E. 158
Price, Raymond S. 151, 154, 183
  exhibit preparator, exhibit planner for Mission 66 149
  Harpers Ferry Center 187
  Harpers Ferry Museum Support Group, chief 187
  Wayside Development, Branch of, chief 189
  Wayside Exhibits, Branch of, chief 197
Procurement 207
Public Works Administration 55, 56, 59, 98
Publications, Division of 185
Publications, museum
  Clearing House for Southwestern Museums 298
  The Conservation of Prints, Drawings, and Manuscripts 340
  Conserve O Grams 206
  early 10
  Field Manual for Museums 95
  Gleason, Vincent L. 175
  flora, guides to, by Walter B. McDougall 263
  illustrated guide, by Harry Robinson 131
  Manual for Museums 206
  Museum News 300
  Nomenclature for Museum Cataloging, adopted by NPS 210
  objects, regarding 106
  The Preservation of Antiquities 338
  Yosemite Nature Notes 5

Quinn, James 125

Raisz, Erwin J. 42, 47
Randell, Fonda
  see Thomsen, Fonda (Randell)
Raphael, Toby J. 358
Rathbone, Henry R., Major 340
Rattenbury, Richard 211, 357
Raul, Harry L. 81
Research and Education, Branch of 20, 55, 77
  see also Museum Division
Reclamation, Bureau of 79

Records
see Documentation
Red Cloud, Chief 271
Reference Services, Branch of 197, 201, 245
Reference Services, Division of 201
Relic House, Colonial NHP 22
Reports
Historic Furnishings Report 225
Historic Structure Report 224, 241
Repositories, NPS 301
Repositories, non-federal 261, 276
Reproduction furnishings 19, 224, 283
Research 321, 327
overshadowing of curation of collection 262
role of objects in 85
Research, curatorial 22
applied to exhibit and interpretive planning 41, 327
ethnological 271
Restoration 21
Rett, Egmont 36
Richter, Bertrand L. 165
Rice, James W. 352
Ricketts, James B., Captain 123
Rickner, Thomas 14
Rickey, Nan (Carson) 239, 250, 326
Riss, F. Daniel 357
Riley, Edward M. 234
Rishel, Norma 209
Rishel, Roger 203
Rittase, Roger 159
Robinson, Harry B. 123, 131
Robinson, William M., Jr. 20
Rock Creek Park 226, 229
Rockefeller, John D., Jr. 17, 21, 224, 268
Rockefeller, Laurance S. 273
Rockefeller, Laura Spelman, Memorial 31, 38, 42
Rockwell, Joseph H. 155, 187, 189, 200
Rocky Mountain National Park 11, 56, 99, 105
Rocky Mountain Region 212, 323
Rodeck, Jean H.
see Swearingen, Jean H. (Rodeck)
Rodnick, David 98
Rogers, Barclay 357
Rogers, Edmund B. 49
Ronalds, Francis S. 231, 276
Roosevelt, Theodore 177
Rose, Carolyn 358
Rose, Robert 53
Rothrock, Howard E. 85
Royal, Lynn A. 81
Ruhle, George C. 94
Russell, Albert Brill 69, 80, 82
Russell, Carl P. 49, 67, 108, 228, 280, 295, 312
as field naturalist-museum advisor 53
biography of 36
Branch of Research and Information, chief 85
concept of a narrative museum 70
Eastern Museum Division, chief 72
exhibits, evaluation of 162
Museum Division, chief 77
museum manual, involvement in writing 95
staffing, curatorial 325
training in museology 44
Tumacacori Mission, inspection of 223
Western Museum Laboratory, part-time consultant to 155
Wildlife Division, chief 84
Yellowstone NP 44
Yosemite NP 8, 34, 303
Russell, Richard W. 197
Ruthven, Alexander V. 36

Saarinen, Eero 156, 174
Sachse, John A. 70, 89, 305
Sack, Susanne P. 350
Safety 249, 311, 314
Sagamore Hill National Historic Site 282, 350
Sagan, Marc 175, 185, 193, 197, 294
Saguaro National Monument 138
Saint-Gaudens National Historic Site 251, 276, 283, 327
Salem Maritime National Historic Site 229, 283, 340, 350
San Francisco Maritime State Historic Park 284
San Francisco Mint 105, 153, 186
San Francisco Museum Support Facility 187
San Juan National Historic Site 140, 347
Santens, Joseph 36
Saratoga National Historical Park 239
Sartor, Mary 129
Savage, Edward 235, 279
Sawtelle Collection at Acadia NP 283
Sawyer, Edmund J. 10
Say, Thomas 266
Schellbach, Louis 56, 74, 77, 142
at the Museum of the American Indian 45
Grand Canyon NP, park naturalist 263
Scherer, Robert 120, 193
Museum Branch, chief preparator 138
Scotts Bluff NM 343
Schiele, R. M. 260
Schiffman, Saul 178, 193
Schonewald-Cox, Christine 205, 210
School of American Research 16
Schwartzbaum, Paul 361
Scope of collections 3, 257, 292
limiting acquisition of similar objects by different parks 123
statement required by each park 295
Scotts Bluff National Monument 18, 61, 94
administration/museum building in 99
Jackson, William Henry, donation of works by 279
Stone, Julius F., funding for museum from 128
Scoyen, Eivind T. 161
Screven, Chandler 178
Second Park Naturalists Conference 108, 293
Segeren, John A. 151, 154, 187

Sequoia National Park 9, 104, 182
Setser, Vernon 70
Setzler, Frank 22, 269
Seybolt, Merwin N. 121
Shanks, Royal E. 260
Sharp, Aaron J. 258
Sharples, James, Sr. 277
Sheetz, Dorothy 209
Sheetz, Ralph 188, 210, 352
Sheetz, Ronald E. 359
Shenandoah National Park 107
Shepherd, Charles 211, 357
Shiloh National Military Park 73, 87
Shiner, Joel 274
Shipley School 195, 355
Shipping 203
Significance 292
  as a factor in museum development 43
Site surveys, archeological 268
Sitka National Historical Park 18, 337, 351
Skinner, Milton P. 9
Slides, lantern 58, 101
Small, Edwin W. 229, 342
Smith, Franklin G. 307, 323
Smith, James B., Jr. 210, 351
Smith, Lloyd W. 276
Smith, William A. 193, 145
Smithsonian Institution 12, 353
Snow, Carol 211, 357
Society for the Preservation of New England Antiquities 229
Society of the War of 1812 in Maryland 279
Souder, Norman M. 243
Southeast Region 262, 323
Southeastern Archeological Center 301
Southwest Archeological Center 257, 301
Southwest Region 323
Southwest Museum 13, 101
Spagnolo, Frank 145, 194
Spalding, Branch 85
Spalding, Henry H., Collection at Nez Perce NHP 272
Spangle, Paul F. 149, 183
Specimens, casts of 266
Specimens, voucher 264
Springfield Armory National Historic Site 281
Springfield, Virginia 188
SS *Bertrand* 358
St. Augustine Historical Society 141
Staffing, curatorial 46
  Bumpus, Hermon C., establishes NPS curatorial staffing pattern 322
  career ladder for 164
  chief curator 295
  Civil Works Administration 56, 269
  Civilian Conservation Corps 55, 270
  classification standards 328
  connoisseurship in competition with collections management 326
  collateral duty 325
  development of centralized staff 67
  Emergency Educational Program 56
  Federal Emergency Relief Administration 56, 270
  first use of "curatorial" in position titles 70
  furnishings plans, search for curators to create 238
  in parks 322
  loss of 83
  policies and standards, responsible for 322
  political endorsements for appointments 71
  program representation in the Washington Office 211
  qualification standards for 326
  regional 184, 205, 211, 307, 323
  staff curators 325
  staffing levels 96
  State Emergency Relief Administration 56
  supplemental staffing utilized by Arthur C. Allen 211
  training, *see* Training
  Works Progress Administration 101, 270
Standards
  for collecting natural history specimens 41
  for documentation 307
  for exhibits 35, 42, 87
  elevation of by Arthur C. Allen 202
  interpretive 43, 164
  preservation and protection 17
  professional, development of 105
Stansfield, Geoffrey 196
Starrett, Robert D., 73, 80, 90, 91, 97
Staten Island Historical Society 300
Statue of Liberty National Monument 74, 109
  American Museum of Immigration 156, 194
  evacuation of objects during World War II 107
Staubs, Hilda E. 328
Stech, David H. 74
Steen, Charlie R. 342
Stephen T. Mather Training Center 127, 182, 205
Sternberg, Charles W. 104
Stevens, Alden B. 73, 80, 90, 94
Stewart, Marion B. 151
Stone, Janet 210, 354, 361
Stonewall Jackson Memorial Shrine 249
Storage equipment
  cabinets 207, 314
  Cumberland, Donald R., Jr. 207
  development of 314
  funding for 316
  Manual for Small Museums 314
  standardized for NPS 315
  Western Museum Laboratories 314
Storage spaces 311
  Check List for Museum Planning, 1948 312
  collection storage plans 313
  interpretation of 22
  lack of adequate 208

visible storage 70
see also Storage equipment
Storer College
see Harpers Ferry Center
Stowell, Walton 188, 193
Strand, Richard H. 193
Structures
criteria for furnishing historic 251
historic structure reports 224, 241
in historic scene 242
Inventory with Classification and Work code for Historic Buildings 241
reconstructed 19, 188, 223, 224
restoration of 224, 228, 229
settings of typical lifeways 242
significance based on architectural, aesthetic or historic factors 232, 242
see also Furnished historic structures
Stuart, Gilbert 279
Study collections
see Collections, study
Stupka, Arthur 259
Sully, Thomas 279
Summers, Andrew 165
Supplies, centralized assistance for obtaining 207
Surface collecting 268
Surveys, archeological 268, 275
Survey of needs of NPS museums 105
Sutton, Dick 150
Sutton, Myron D. 148
Sutton, Virginia (Mrs. Jean C. Harrington) 22
Swain, Donald 194
Swan Tavern 21
Swearingen, Jean H. (Rodeck) 154, 323, 324
Swift, Ellsworth R. 180, 186

Tancil, Vernon C. 155, 186
Tanner, James T. 260
Taxidermists
Jonas Brothers 49
Nordquist, Gus 36
Santens, Joseph 36
Tose, Frank 37
Taylor, Raleigh 126
Technical Studies in the Field of the Fine Arts 335
Textile Museum of the District of Columbia 346
Theodore Roosevelt Birthplace National HIstoric Site 350
Thomas Moran Art Collection of the National Parks 278
Thomsen, Fonda (Randell) 206, 208, 210, 211, 356
Thymol 339
Tinney, Nelson A. 146
Titiev, Morris 73, 79
Title, problems of 19
Toll, Roger W. 49, 84
Toothaker, Charles 45
Topographic models 55
Tose, Frank 37
Townsley, Forest S. 3
Trager, Earl 68, 85
Training 90
Curatorial Methods Course 196
Curatorial Methods Course—Phase II 205
for field personnel 126
for maintenance staff, care of furnished historic structures 248
initiatives from Division of Museum Services 204
interpretive, in furnished historic structures 250
Museum Methods Course, resumed 157
regional level 205
Stephen T. Mather Training Center 127
Training for conservators
advanced 360
Fogg Art Museum 335
International Institute for Conservation of Historic and Artistic Works 336
Smithsonian Institution, Conservation Analytical Laboratory 353
Washington Conservation Guild 353
Trela, Richard 211, 357
Museum Services, Division of, experience in 211
NPS conservation laboratory, apprentice 357
Trexler, Keith A. 180
Tumacacori National Monument 18
administration/museum building in 100
conservation treatment of 361
early example of furnished historic structure 222
Rose, Robert 53
Turner, Houston 159
Type specimens 259

U.S. Army 1, 2, 188
U.S. Congress
Committee on Interior and Insular Affairs 213, 295
support for museums in parks 41
U.S. Geological Survey 12, 79
U.S. Military Academy 199
University of California, Berkeley 2
Updegraff, Margery 146, 189
Uplands Field Research Laboratory 262
Urban, Frank G. 80, 129
USS *Cairo,* Vicksburg NMP 284
USS *Constitution,* Boston NHP 284

Valley Forge National Historical Park 285
Van Cott, Herman 80, 118
Van Dorp, R. 259
Vanderbilt Mansion National Historic Site 120, 231, 283
McClure, Albert 233, 326
seminar on furnished historic structures 247
Vaughan, Thomas G. 211, 360

Vella, Edward LeRoy 154
Venturi, Rauch, and Scott Brown 198
Verendrye 18
Vernon, David T. 273
Vice, Michael J. 324
Vicksburg National Military Park 73, 86, 284
Vint, Thomas C. 34, 77, 142
Virgin Islands National Park 264
Visitor centers 147, 150, 175
Visitors
  behavior patterns in exhibit spaces 161
  intellectual use of park exhibits 177
  orientation through museum exhibits 35
Voucher specimens 264

Wakefield National Memorial Association 19, 223
Walker, Ronald H. 197
Walker, Tyra 211, 359
Wallace, David H. 326
  biography of 188
  Curatorial Methods Course, development of 196
  furnishings plans 245
  Harpers Ferry Museum Support Group 188
  Independence NHP 240
  inventory of American paintings 277
  Museum Operations, Branch of, assistant chief 188
  Museum Operations, Branch of, chief 194
  National Catalog, proposal for 209, 310
  NPS Archives, development of 197
  Reference Services, Branch of, chief 197
  storage of collections, example of 317
Wallace, Lee A. 152, 192, 201
Walnut Canyon National Monument 100, 187
Wandrus, Harry 345
Wandrus, Marilyn 192, 202
War Department 227
Ward, Frances 192
Warriner, Ralph 194
Warthen, David E. 97, 195, 202, 210
Warthen, Lee 80, 97
Washington Association of New Jersey 23, 221
Washington Conservation Guild 122, 353
Washington Monument 110
Waterman, Thomas T. 228
Watkins, C. Malcolm 274
Watson, Donald C. 17, 272
Wayside exhibits 188, 193
Webb, Paul 194
Weber, Walter 96
Weig, Melvin J. 228
Welch, William 38
Wells, William 140
Wenger, Gilbert R. 149, 186
Werner, Janet 211, 357
West, Pamela 324
Western Archeological Center 361
Western Museum Laboratories 314
Western Museum Laboratory 85, 102
  Andersen, Richard L. 351
  conservation treatment of objects for exhibit 350
  departments of 102
  donation of paintings by Christian Jorgensen, received by 278
  Hauschildt, Kurt 351
  instability of work force in 102
  Jenkins, John, chief 153
  phase-out of 183, 186
  products and services offered 103
  San Francisco Museum Support Facility 187
  transferred to Museum Development, Branch of 165
Western Region 323
Wetherill Mesa Archeological Project 269
Wetherill brothers 11
Whalen, William J. 213
White House 231, 232, 306
White Sands National Monument 104, 118
White, John R. 9
White, Theodore E. 265
Whittaker, R. H. 260
Whittier, John Greenleaf 12
Wick farmhouse, Morristown NHP 228
Willcox, Horace 308, 323
Willett, John 129
William Howard Taft National Historic Site 251
Williston, Sidney S. 358
Wiltshire, James (Mike) 210, 359
Wimar, Carl 348
Winkler, Joseph Fred 152, 165, 183, 194
Wirth, Conrad L. 55, 83, 130, 163
Wissler, Clark 31, 70
Wolf, Robert 178
Wolfrey, Thelma 165
Wood, Harry C. 74, 97
Woodward, Arthur 56, 104
Works Progress Administration 97, 101, 270
World heritage sites 322
World War II 106-109
Wright, George M. 84

Yavapai Point 38, 54, 199
Yeager, Dorr 44, 49, 85, 101
Yellowstone National Park 44, 49, 140, 301, 325
  bibliography of scientific research in 57
  early exhibits 7
  Hayden expedition 279
  Moran, Thomas, paintings by in collections 278
  museums in 42
Yorktown Sesquicentennial 20, 225
Yosemite National Park 8, 29, 34, 101, 325, 328
  arboretum 1
  conservation treatment of paintings 342
  documentation of collection 303
  Field School of Natural History 35
  furnishings plans for 242
  Hill, Thomas, paintings by 4, 278
  Jorgensen, Christian, paintings by 278
  Mariposa Grove 182

Mitchell collection of Indian baskets 6
Museum of Vertebrate Zoology 2
museums in 29, 34
Pioneer History Center 242
Yosemite Nature Notes 5
Young, Cliff 133
Younkin, Clair H. 152, 154

Zari, Donatella 361